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ORIGINAL COMMUNICATIONS.

RESULTS FOLLOWING OPERATIONS.[1]

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The last twenty-five years have witnessed the tremendous developmental periods of surgery. Within the abdomen one field after another has been so rapidly invaded, and new discoveries concerning abdominal diseases and their surgical treatment have followed in such close succession, that those actively engaged in operative treatment have not always taken the time sufficient to make inventories of actual curative results.

In early mining days in old Virginia City the virgin sand beds were so rich in gold that even crude methods of separation yielded a very lucrative return to the miner, hence he paid little attention to refinement in his work. Now it has been found that vast quantities of gold have been shoveled over into sand heaps, which are giving a splendid profit to the new miner with his improved methods.

We have passed through a similar experience in surgery. At first, when ovarian cysts, large fibroid tumors, etc., were of every-day occurrence, they constituted the chief operative output. Even though methods were crude, a large percentage recovered. This period has merged into a wider abdominal surgery, which requires not only greater operative skill, but even more important, greater operative judgment. It is now a question which cases not to operate upon rather than which should have surgical measures. By this I mean that the greater number of unquestioned organic surgical conditions have well-established groups of symptoms; in the neurotic, on the contrary, no such perfect definition is possible.

To ascertain the symptomatic part of the equation and develop it in the organically diseased at once leads to the application of the second half—surgical relief. In considering the after-results of operations, we may divide the human race into four classes:

1. The organically diseased.
2. The nervously diseased.
3. The organically diseased who, because of this condition, become nervously upset.
4. The neurotic individual who becomes organically diseased.

The first and second groups are usually easily differentiated. The strong, healthy individual stricken with acute appendicitis represents the first, while the neurotic or hysterical individual, who is and always has been an imaginary prey to every ill in Pandora's box, belongs to the second class. Both are so clearly defined by their histories that he who runs may read. The third group, however, is not so easy of ultimate analysis. The same strong man stricken with appendicitis is operated upon, and although the surgical course is ideal, yet he becomes neurotic in the extreme. For a time the neuronic governor ceases to work

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properly, and he falls into a state in which all the inhibitory centers are working poorly. He becomes sour, morose, and for a time is an exaggerated hypochondriac. If, however, there is no organic defect left by the operation he gradually pulls out of this state and finally returns to normal equilibrium.

The neurotic individual who becomes organically diseased follows a very different course as a rule. Fortunately there are brilliant exceptions, for I have seen a well-nigh hopeless neurotic restored to health after possibly a trivial operation. Indeed, the magnitude of the operation appears to play little part in the therapeutic result. However, as a rule the surgeon who has to do with this type of patient enters the field of perpetual complaint, for do what he may they are still like the old darky: "Feelin' porely, bless de Lawd!"

From this brief analysis it will be seen that to estimate properly our surgical results we must more accurately study the temperamental side of the patient. Postoperative statistics as they are now compiled in abdominal surgery are well-nigh valueless. A surgeon reports 1000 cases of such and such a disease with a given mortality. This really gives us very little idea as to his actual results. For instance, a gangrenous appendicitis is very different from a simple catarrhal process, and the two classes of cases should never be grouped together, either in estimating the immediate or remote results. The catarrhal cases should be attended with practically no mortality, and yet they are likely to be followed by much less satisfactory therapeutic results. In one the symptoms are acute, fulminating, and point unerringly to the diseased spot. With surgical recovery comes health. In the catarrhal case the outcome is problematical. The patient may have a general catarrhal colitis, and the appendix is an infinitesimal but painful part of the process. Linked closely with it is also that persistent array of symptoms called neurasthenia, which occupy a twilight zone between the so-called organic and functional affections. The purely neurotic affections constitute a much darker zone: it is rather that of Stygian darkness, in which neurologist, surgeon, and physician wander aimlessly, each occasionally securing a patient, who is dragged into the light, but there are many more failures than successes. In this field the osteopath, Christian scientist, etc., like the blind fish of the Mammoth Cave, apparently work more successfully. Perhaps it is because it is all blind guesswork, and the more obtuse he is to the light of intelligence the more certainly he will lead a companion out of chimerical darkness, for he has no qualms as to the presence of an organic lesion, but treats all alike.

This is, however, digression; the point which I wish to make is that in the neurotic field every branch of medicine has its worst results. Perfect indeed must be a surgical recovery, for if the operation leaves behind adhesions, scar tissue, or a slightly distorted organ, a pathological entity will be established which may give rise to more profound symptoms than the conditions for which the operation was performed.

Before taking up the last group of cases I would emphasize the foregoing by calling attention to the necessity for a closer analysis of symptoms before resorting to surgery for relief. The day should come when we may more nearly divide groups of symptoms, like the spectrum, into their component parts. For instance, in a given case one might estimate that a symptom-complex consists of a purely organic disability one-half, neurotic (basic) one-fourth, allied symptoms one-fourth. With such an analysis one might make a prognosis as to recovery approximately as follows:

Symptoms.	*Result.*
Organic	Relief.
Neurotic (basic), one-fourth	No better.
Allied symptoms, one-fourth	Improved.

With such an analysis there would be a much closer appreciation of what is to be expected from surgery.

It should be the endeavor of the surgeon to so conduct every abdominal operation that no pathological condition shall be introduced into the case that may either retard the convalescence or substitute even a

more disabling lesion than that for which the operation was performed. The splendid technique which most surgeons have acquired in excluding sepsis, preventing hemorrhage, and warding off other immediate complications is chiefly responsible for the great reduction in mortality and morbidity statistics.

There are two organs, however, which I am sure have been looked upon too lightly in completing the peritoneal toilet—the omentum and the colon. In the past surgeons have prized the omentum so highly as a barrier for injured peritoneal areas that they have systematically endeavored to pull it down over operative fields, or have even resorted to sutures to retain it in such positions. In our postoperative study of cases for remote results of operations we have been struck with the number of cases in which constipation of varying degree has been a disagreeable or very distressing sequel. Perhaps the surgeon has attributed this to some occult influence dating back to an obstinate attack of paresis following the operation. In referring the obstructive symptoms to the operation he may be right, but his interpretation as to a postoperative paresis is wrong. Where there is one case of true postoperative paresis, there are probably twenty others which are due to some distorted position of the colon which either corrects itself during the convalescence or becomes, through adhesions, a permanent disability. The omentum hanging as a curtain from the transverse colon, which in turn is directly connected with the lower border of the stomach, constitutes a chain of very vital organs, upon whose proper function the comfort of the patient depends. Gentle traction on the omentum through a suprapubic incision will bring into view not only the transverse colon but usually the stomach if it is in a moderate degree of ptosis. Release the tension and these organs return but slowly to their normal position. Fix these organs in this distorted position, and partial mechanical obstructions are established at the hepatic and splenic flexure of the colon and at the pylorus. If, therefore, postoperative adhesions form and hold an omentum firmly to the incision, to a stump, or a raw area, anatomical difficulties are established which may lead to more or less persistent and distressing gastrointestinal symptoms. The sigmoid flexure is likewise a movable and not infrequently a redundant organ. To carelessly permit it to fall into a bad position, such as slight torsion or crowding its loop down into the pelvis to cover a raw area, may lead to infinitely more trouble than would ever be possible from a raw or even an infected area. I am sure that some of our very obstinate cases of colonic tympanites are due solely to this cause.

My plea, therefore, in conclusion, is for greater care in the disposal of these movable organs at the completion of an operation, not so much for the immediate as for the remote effects. Every one realizes that even a minor postoperative disability may vitiate the most successful life-saving result. Patients often do not appreciate the fact that their lives have been saved if they are constantly nagged subsequently by constipation, tympanites, eructation of gas and sour liquids, etc. They will argue that such was not the case before operation, therefore the operation has not only been a failure but has actually left them disabled. We may then see the neurotic individual become more intensely neurotic, the organic and nervously sound individual becoming neurotic, and an otherwise grateful patient converted into a sour, dyspeptic, carping critic. It behooves us, therefore, to look to the psychic side of our patients before operating, restraining our surgical enthusiasm in the neurotic individuals with quasi-organic symptoms, and looking carefully to the organically diseased individual, whether neurotic or not, to see that in the course of an operation we do not leave needless disabilities behind, which will intensify the neurotic symptoms in the person already so constituted, or convert the otherwise normal individual into these trying medical characters.

ALCOHOLISM, WITH SPECIAL REFERENCE TO ITS TREATMENT.

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A single attack of drunkenness does not constitute a pathological condition. But when such a state of affairs is repeated again and again, either daily or at longer intervals, the condition comes within the realm of disease. Until it reaches a stage where it is either uncontrollable or produces well-defined changes of mind or body, it does not enter into the domain of ordinary medical practice.

It is customary to divide alcoholism into two forms of manifestation, acute and chronic. But for many reasons such a classification is of small value. For convenience it is better to consider not the form of the individual seizure, but the type of the individual who suffers from the seizure. He may be said to represent one of three types:

1. Those who drink to excess daily or continuously—habitual drunkards.

2. Those who imbibe immoderately at intervals, to celebrate joy or drown sorrow, or under the guise of having a good time—periodic drunkards.

3. Those who, governed by irresistible impulse, mastered by overpowering drink lust, absorb alcohol at more or less regular intervals, go through a distinctive disease process, satisfy a constitutional craving, and voluntarily or with assistance cease entirely the use of alcoholics until the next storm seizes them. These are called dipsomaniacs.

It is said that heredity plays a prominent part in all forms of alcoholism, but I believe that drunkenness and sobriety manifest themselves as often in opposition to their occurrence in the ancestors as they are observed as inherited tendencies. Who, for example, is not familiar with the family in which abstemious and sober sons put to shame the drunken father? Who is not acquainted with the drunken sons of prohibition parents? The tendency seems far less a matter of inheritance than it does of environment and faulty training. Few there are who can search their genealogical trees without finding one or more ancestors who might well pose as "terrible examples."

In class one the alcoholic abuse is an acquired habit of the purest type, requiring no pathologic basis. It is often an occupation habit, liable to seize any victim who exposes himself, and showing no predilection for any special type of individual. It is witnessed at its best (or worst) in saloonkeepers, brewery workers, beer pedlers, etc. Secondly, it arises from the use of alcohol in the run-down and congenitally weary, who need, or think they need, its stimulus to stir them into activity. It conforms in its outlines to the so-called "chronic form."

The second form is an acquired habit, but less purely so than the first, for while the first form is an occupation neurosis, seizing alike the weak and the strong, the second is only likely to seize those who have special psychical or physical susceptibilities. The primary effect of inebriety in nearly all individuals unaccustomed to the use of alcohol is one of rather unpleasant exhilaration, followed by decidedly unpleasant after-effects. But in the susceptible the first effects are pleasing and the reaction either wanting or very slight. Thus when an individual tells of a debauch of a few hours' duration followed by headache, nausea, and prostration, he is in no danger of becoming an habitué unless he sets out deliberately to overcome his enemy, alcohol, or to get on friendly terms with it by constant association. On the other hand, those who suffer no after-effects are victims of idiosyncrasy, that makes even the infrequent use of alcohol dangerous. When an individual after a night's debauch awakens with a desire for a stiff drink, and when such a drink taken before breakfast is tolerable or gives relief from qualms of stomach or of conscience, he is possessed of or has created a susceptibility that endangers his welfare, and he had better for all time give up the use of alcohol in any quantity whatever. Mental weakness, defective judgment, neu-

rotic tendencies, indifference to consequences, desire to drown sorrow or celebrate joy, all enter into the creation of the second form of habit. The habit of treating fosters and strengthens it.

In times past, and to a certain extent at present, the teachings of rabid prohibitionists have done much harm through distortion and magnification of the known effects of alcohol. Overzealous and fanatical attacks on the use of alcohol, as distinguished from its abuse, have sometimes reacted. The text-book which portrays the reddened and congested appearance of the human stomach after a single drink, and the swollen and bloody stomach after a debauch, creates distorted images in the minds of the adolescent who reads it and leads to repulsion. But a year or two later, when he hears father or brother speak of the pleasing effects of wine, or experiences these effects from its moderate use, how often does he seize upon the fact that the primary effect has been misstated, and with the logic of an untrained mind assume that all has been misrepresented. Fear and dread give place to tolerance, and tolerance to friendly cultivation. That which he was taught to loathe he has learned to love. I have been profoundly impressed, especially in my boyhood days, by the frequency and severity of alcoholism in the sons of rabid prohibition parents, and this can undoubtedly be attributed to the exaggeration of the teachings, which have reacted to the detriment of those who should have been benefited rather than harmed; while temperance in teaching as well as in the use of the drug has inculcated that wisdom which leads not into danger but away. And let it be said that temperance in teaching is not inconsistent with the doctrine of total abstinence.

In the third form of alcoholism habit ceases to be of importance. Dipsomania has passed the realm of cultivated tendency, has slipped beyond the ill-defined border and is well within the domain of disease. As in many other diseases, its victim must pass through the phases from beginning to end. Each seizure paves the way and prepares for following seizures. Dipsomania is insanity. Its victim usually has premonitory symptoms of an attack and may make ineffectual attempts to evade it. More often he does not attempt to combat the tendency, rather seeming to increase the desire by pleasurable anticipation during a brief delay which seems to but whet the appetite. In the interval between debauches he is fully aware of his past mishaps and is certain that he can resist temptation when it comes. But as the crisis approaches he conceals the danger from himself, craves a single drink, takes it, and for the time being is lost.

I have seen many dipsomaniacs, and talked with them both during and between attacks. I have yet to see one who does not claim that the taste of alcohol is disagreeable, and during remissions the sight of a drunken man an offense. But when the drink lust seizes him he forgets the taste, forgets everything in the mad desire for the effect, and literally absorbs alcohol in any form in which he can get it—the stronger the better—until the storm passes.

In dipsomania inheritance is of more importance than in either of the preceding forms. The parent or grandparent may have been a habitual or periodic drunkard, and as during the earlier hours of inebriety, sexuality often becomes rampant, I sometimes wonder how many of these victims have reaped the curse of parental indiscretion through having been conceived during the height of intoxication.

One is often surprised at the lateness in life of the appearance of dipsomania. Men who have gone to the age of thirty or forty years or more, temperate or abstemious, may suddenly, after a few hours' conviviality, find themselves seized, and before they are aware of the danger fall almost hopeless victims of the disease. Occasionally at this time of life victims of the second type of trouble find that their habit has become a disease, and the manifestation of the attack changed from that of periodic drunkenness to dipsomania.

It is unnecessary to discuss the exact symptomatology, for this is well known. But recognition of the type of attack is important. In habitual drunkards there is no special attack; rather is there a perpetual siege. Daily, drink is taken until a comfort-

able degree of intoxication is reached, and this is maintained less by regulating the number of drinks than by regulating their size. With time and practice tolerance may be acquired until the amount taken seems unbelievable. Two or three pints of strong whisky daily for months is by no means the maximum.

Periodic drunkenness usually begins with a friendly drink, followed by others in rapid succession. Sprees seldom last more than a few hours or two days at most, during which a quart or more of whisky or its equivalent may be consumed daily. Attacks bear relation to crises in the drinker's life far more than to any regulated periodicity. They are not due to any special craving for the first drink, and if that can be avoided for a short time until temptation has passed there will be no debauch. Once taken it seems to destroy the taker's intellect, and without rhyme or reason is followed by others, until a state of beastly intoxication is reached. In the method of beginning lies its great difference from dipsomania. In this form the drinker may claim to take the first drink for the sake of conviviality, but if he so claims he lies, for in his innermost consciousness he knows that he craved it. Hating it as the devil is supposed to hate holy water, he has yet sought an excuse to take it. He who in health is nauseated and almost chokes over a drink of whisky, in the attack may drain off a gobletful of fiery spirit without winking an eyelid. Beginning gradually, he works rapidly up to the amount necessary for comfort, and takes it with the regularity with which medicine is commonly prescribed. When the right condition is reached he takes enough to keep saturated. I know of several dipsomaniacs who claim to use as much as two quarts of whisky a day, and one in particular who claims often to have exceeded that amount by 50 per cent.

As in periodic alcoholism, the dipsomaniac may lose his sense of propriety, become excited and bellicose, but unlike the former he rarely loses all control of himself. When you read, for example, of a drunkard being robbed, you may usually class him as a periodic or a neophyte. The habitual drinker keeps nicely primed, and is often at his best only when intoxicated, while the dipsomaniac, though maudlin and prodigal, is likely to have a fairly keen sense of his responsibilities. He may give his money to an acquaintance for safe-keeping, but he is apt to ask for a receipt for it, and after the siege will recall the fact of having given it, time and place being of lesser importance. If stopped from drinking by arrest or confinement in an institution he sobers quickly, but unless the cycle is nearly complete immediately insists on having his stimulant, asserting that he will return to his debauch as soon as released and finish it in his own way; or begging pitifully to be released, swears that he would not for any price touch a drink, yet if offered one can hardly control his frenzy to get at it. In this respect he differs from the other types, who as soon as they are cleaned out and thoroughly rid of alcohol cease to crave it, although in such weakened physical condition that it is temporarily a necessity to life and mental stability.

The climax of alcoholism is reached when the victim passes into that form of mental and motor agitation called delirium tremens. Its manifestations are familiar to all, and it is only mentioned here to state that in the habitual drunkard it often develops only after drink has been withdrawn, while in the other forms it appears at the height of the seizure. In this point is the chief reason for differentiating because of the influence on treatment. Rarely, withdrawal of drink from the dipsomaniac or periodic drinker also results in delirium.

Treatment must meet three indications:

1. Prevention.
2. Cure of the habit.
3. Cure of the attack.

Omitting any reference to the educational factor in the life of the growing child, and coming directly to the individual who already exhibits alcoholic tendencies, it may be said that the first indication for treatment may be met by the exercise of restraint on the part of the would-be drinker. The first and second classes are safe enough if

they will remain away from the surroundings which bring on attacks. They may want a drink, but it is within their power to resist the craving, once they have recovered from a seizure, and the longer they remain away the less will be the desire. Moral suasion and coercion are therefore admirable adjuncts to the prophylaxis of these forms of alcoholism. But in true dipsomania such forces are of small value. Here a positive and powerful force is being continuously exerted—the victim is being steadily dragged into danger. This tendency is unquestionably influenced by surroundings and physical mishaps. Much can be done to prevent the onset of desire by careful attention to hygienic rules. The bowels must be kept open, cautious exercise taken, regular hours insisted upon. When the storm threatens, a calomel purge, a hot bath, a night's rest in the care of a trained attendant occasionally help to such an extent that the battle is won. Each victory makes succeeding victories easier. Such as fail go into a debauch which lasts from five to twenty days (averaging ten to fourteen), until, weak and trembling, with bowels constipated, kidneys disturbed, suffering from disturbed sleep and loss of appetite, the victim either breaks away or gets into such condition that the services of a physician are needed.

In the prophylaxis it becomes apparent that good hygiene, good environment, and the use of eliminants and tonics (which must not contain even a trace of alcohol) are the chief requisites.

For the second indication, cure of the habit, much can be done by regulating the habitué's life either at home or, better, in a properly conducted institution where he can be watched. Every possible infirmity must receive attention and correction. Massage and electricity used judiciously serve to maintain a good standard of physical well-being, and are useful also for their psychic effects. Semidaily injections of gold and sodium chloride can be recommended. Herein nothing is claimed of a specific nature, except that these injections satisfy the constitutional craving for tonic effects without the undue exhilaration which strychnine seems to produce. Proper encouragement, and the tiding of patients over one or two crises, will result in the cure of perhaps 75 per cent of all patients who try this treatment faithfully, provided that at the beginning they are in reasonably good physical condition, and free from organic lesions.

When at the height of a debauch medical attention is sought, the first indication is to thoroughly empty the intestines and the stomach. This is best done by the use of a large, high enema and the prompt administration of calomel, followed in five hours by a vigorous saline. I do not recall a single case of delirium tremens in which the bowels were not loaded, except in those cases in which the delirium complicated some other illness. I do not like the use of apomorphine, as it sometimes produces exhaustion, but recognize its merits in jail and emergency work. Should the patient resist and threaten fight, especially if he is robust and powerful, 1/100 grain of hyoscine hydrobromate may be given in a glass of whisky, which he will only too readily take. Thirty minutes later this may be repeated if necessary. After the first or second dose most patients go to sleep, rarely requiring a third dose. During the drowsy stage they may be undressed and put in bed, and the enema given. A fight, with its consequences, more serious to the patient than to the attendants, may thus be avoided, and after a sleep lasting from four to eight hours he will awaken tractable and easily handled. To get this effect the hyoscine must be a reliable preparation, and this can be said of but few tablets on the market. A speedier effect can be obtained by its use hypodermically, if necessary.

To quiet the nervous and gastric symptoms, bromide and gentian are the most useful drugs, and may be given every two or three hours in the proportion of fifteen grains of the sodium bromide to a drachm of the compound tincture of gentian. Tincture of capsicum 10 to 15 minims in half a glass of hot milk every two or three hours is gratefully taken and relieves the desire for whisky. If the delirium follows the discontinuance of whisky, as in many habit-

ual drunkards, and the patient is weak, whisky must be given together with strychnine by hypodermic injection.

Let us urge against the use of chloral. This paper would not have been written were it not to insist that chloral in the treatment of alcoholism has no place and is a dangerous drug.

These patients are already poisoned, and their delirium is the result of disturbed cerebral circulation. Chloral *may* produce sleep, but more often it serves only to intensify the delirium, increasing especially the hallucinations. Nowhere can one see such vivid hallucinations as result from the use of chloral in alcoholics. The increase of these sensory phenomena, especially of sight, is often looked upon as additional indication for more chloral, and before the physician is aware of it his patient has become cyanotic, the strenuous activity has given place to a low form of muttering delirium, the sensorium is clouded and full of ghostly forms, the pulse rapid and weak, the respirations shallow, the pupils dilated, and unless stimulation is freely used the patient is likely to pass into the great beyond. I am sure that I have seen two such cases, and probably three, in which chloral was the cause of death. I am equally certain that I can recognize in any alcoholic the presence of chloral if it has been used in any save the most modest dose, by the peculiarly vivid character it lends to the hallucinations in the early stage, by the circulatory disturbance and clouded sensorium of the later stages. The bromides, on the contrary, will, if given time, produce quiet without depression, and may be supplemented by trional, sulphonal, or veronal, especially the latter, with beneficial results. To be effective veronal should be given in a single large dose of fifteen grains in hot milk.

By following the above methods I am accustomed to predict in severe cases a bad first night, a disturbed second night, a restful third night, and an exceedingly low mortality. If after three days of this treatment the patient is free from nervousness he may be dismissed with safety, and in periodic drinkers with the certainty that he will not immediately return to his drink. But if by the fourth day the patient is not clear in mind he is probably the victim of a more prolonged and serious affection, post-alcoholic mania, with which this paper cannot deal.

SHALL WE BLEED?—SHALL WE BLISTER?

BY R. L. HINTON, M.D., PRESCOTT, ARK.

Were our grandfathers wrong in the use of these remedies? Are they to be discarded entirely from the teachings and practice of medicine, or to be mentioned only as relics of the past, and those who still advocate and use them to be branded as old fogies?

Such and similar questions occasionally occur in the current literature of the day, more especially in the treatment of pneumonia, and in these latter days they frequently have to be met and discussed in consultation at the bedside. I have been anxiously waiting in the vain hope of hearing from some abler pen upon this subject, for I must confess that it is with much diffidence I approach it, knowing as I do that not only many in the rank and file of the profession, but some of the very fountain heads whence we get our teachings and our prejudices, differ widely from the views I shall express and endeavor to sustain in this paper. I am not ignorant of the fact that many of our teachers, and authors of leading text-books, speak slightingly of these remedies, while others discard them as "worse than useless," thus sending the young physician forth to practice with this bias and prejudice to be overcome, if ever it is, by observation and experience.

In order to be brief, practical, and above all, to be well understood, I purpose, first, to give a few cases from my practice, in which bleeding and blistering were resorted to, and in doing this I shall not attempt a full history of each case, its symptoms and treatment throughout, but only as much as

will serve my present purpose, after which I will add such remarks as may suggest themselves.

Case 1.—A few years ago I was called to see J. C., aged seventeen, in the town of F., late in the afternoon. He was a young man of slight, delicate frame, but usually in good health, as he was at the time of this attack. His father met me at the gate, and told me that in my absence from town, early in the morning, he had called Dr. M., that he left some medicine which his son had been taking all day, but had been growing worse. I told him to send for Dr. M., and in the meantime I learned that the boy had been complaining for a day or two, and in the early part of the previous night he was taken with a chill, which was followed by a high fever with some difficulty of breathing, which last symptom had been growing worse. I found him propped up in bed in a half-recumbent position, his face flushed, his tongue brown and furred, the skin hot and dry; the pulse was 125. His fever was 104.5°, with distressing dyspnea, and he made frequent efforts to cough. Physical examination discovered about the base of both lungs a state of congestion. Dr. M. arrived, and after taking a glance at the patient we retired in consultation. After having his views of the case and his treatment, I told him it would take something more powerful, more prompt and decided in its action to relieve the urgent symptoms in this case, which he did not question. I then proposed venesection as the only remedy that could meet the case (and it might fail at this stage)—at least all other remedies would prove useless without it. He replied: "I believe, if you bleed this boy, he will die, and if you insist upon it I shall ask to be excused, as I am not willing to share the responsibility." In this dilemma we agreed to call his father and let him decide which of us should take the case. Mr. C., an intelligent and strong-minded man of quick decision, turned to me and said: "Take the case and do what you think best, for something must be done, and that speedily, or my boy can't live." I corded his arm and opened a bold stream into a wash basin, telling the patient to let me know if he should feel sick or faint. When he showed symptoms of fainting I uncorded his arm, lowered his head and shoulders, and the blood stopped. I gave him tincture of veratrum viride and tincture of gelsemium in equal parts, in doses of 6 to 10 drops every four hours as symptoms might demand, with half an ounce of Epsom salts. There was no more dyspnea noticeable; there was a slight tendency to pyrexia the next afternoon, which was easily controlled. On the third day, when I took Dr. M. with me to see the patient, we found him sitting in a rocking-chair by the fire. Dr. M. asked if he was not very weak after so heavy a bleeding. I find this idea very prevalent, whereas the fact is, this draining takes from the circulation a mass of impure blood, the only chance for life in such cases. It is enough to say that this case made a speedy and thorough recovery.

Case 2.—I was called February 18, 1881, to W., a stout, plethoric man, aged twenty-eight. This man had suffered with measles, pretty well developed in all its features, especially the catarrhal symptoms, and I had dismissed him two days before, able to be up and about the house, and bidding fair to be well in a few days. He had taken cold, and his wife informed me that he had been growing worse so rapidly she feared he could not live without speedy relief.

I found him propped up in bed, near an open window, with distressing dyspnea; pulse was 120, skin hot and dry, short and rapid respiration, tongue dry and coated, and to use his own language, "My lungs so stuffed I shall suffocate." He had taken nothing but some fever mixture he had been using during his course of measles. I asked him if he was afraid to be bled. "No," he said, "anything for relief." I corded his arm and opened a bold stream, which at the first jet spouted over the foot of the bed. I watched him until he showed signs of fainting, when I uncorded his arm, lowered his head and shoulders, and the blood ceased to flow. This man was put upon about the same treatment as Case 1, and made the same rapid and complete recovery.

Case 3.—I was called to see D., a stout mill-hand. I learned from the mill boss that this man was taken ill early in the afternoon with pain in the bowels, supposed to have been brought on by eating an apple and drinking cold water while working over a kiln, drying lumber. He had been rapidly growing worse. I found the patient in a state of insensibility, rolling and tossing from side to side of the bed, two men standing by to keep him on. I first gave him a hypodermic dose of morphine gr. ¼, with sulphate of atropine gr. 1/50, with no visible influence whatever. After waiting a sufficient time I corded his arm and opened a full stream, which I did not measure as it was caught in a wash basin, but let it run till by change of color, volume, and consistency I thought he had bled enough. He afterward told me that this was the first thing he had heard or known for some three or four hours. I then ordered tincture of veratrum viride and tincture gelsemium, equal parts, and gave six to ten drops every four hours, to control the heart's action. I left about twelve o'clock in the night, with instructions to let me hear if he did not do well. The next afternoon he sent for more medicine, reporting that he was improving. He made a good recovery.

REMARKS.

These cases were, all of them, of active or sthenic congestion—the first pure pneumonia, the second catarrhal pneumonia, and the third congestion of the bowels.

It will be observed that the remedy was used boldly, and to the full extent, so as to make a decided impression; anything short of this would have proved of no avail.

I read a journal the other day in which a writer said: "The half-way plan of treatment is good as far as it goes, but it doesn't go far enough." I think in many instances it is worse than none, and bleeding had better be let alone than half-way used, with a trembling, sparing hand and a doubtful mind. If you decide that you have a suitable case to bleed, you must have confidence in your remedy and use it boldly, not sparingly, or your patient will fail to get its benefit. Case 1 was selected from amongst the many because it was the most forbidding case I ever bled, and if I had seen any other chance for this young man's life, any other means of relieving his lungs and placing him upon firm ground, I certainly would have shrunk from the use of the lancet in this case and under the existing circumstances, but resting under a deep conviction as to my duty in the premises, and feeling the weighty responsibility that was resting upon me, I went forward in the discharge of that duty, fearless of consequences. Notwithstanding the catarrhal symptoms in Case 2, and that it was a sequel of measles, I did not hesitate to bleed to the fullest extent. In Case 3, of severe congestion of the bowels, the remedy was used to the same extent, and with the same object in view, viz., to relieve an extensive active local congestion, and the effect was just as decided as in the other cases, giving prompt and permanent relief.

I have bled many cases of pneumonia in the early stages, and I think I can safely say two things, viz.: I have never bled a case that could have recovered without it, and I never bled a case that did not recover, usually very promptly, for such cases when bled are about cured; a visit or two, a little attention to the general symptoms, and good nursing are all that is needed. Prof. Henry Hartshorne used to say that although five cases in six would recover without the abstraction of the blood, the sixth might die for want of it.

But the great objection to bloodletting is the drain upon the system. We are told we should husband the strength and resources of the system, and avoid prostration, which would follow this drain of the vital fluid. I admit we should husband the resources of the system, but we should not be penny wise and pound foolish. I have never yet been able to see in reason, and certainly not by observation and experience, that the disgorging and unclogging of an important vital organ, by removing a mass of impure blood, tends to the much dreaded prostration.

THE ACTION OF BILE AND SOME OF ITS CONSTITUENTS UPON INTESTINAL PERISTALSIS AND THE CIRCULATION.

BY ISAAC OTT, M.D.,
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AND

JOHN C. SCOTT, M.D.,
Demonstrator of Physiology.

Fubini and Luzzati experimented with a Vella fistula, where a pea fastened to a thread passed along the bowel quicker when ten to fifteen minutes previously two grammes of bile had been injected. C. Eckhard,[1] of Giessen, also studied the influence of the bile upon the peristaltic movement of the small intestine. Eckhard experimented upon rabbits. He used a sodium chloride bath and studied the movements of the intestine *in situ* after opening the abdomen. After the injection into the duodenum of one cubic centimeter of bile of the rabbit the duodenum remained for ten minutes in absolute rest. He injected three cubic centimeters of bile of rabbit, calf, and sheep in different parts of the small intestine with the same result, the intestine remaining quiet for fifteen to twenty minutes. If, however, the intestine remains for some time in the salt solution, then it becomes more sensitive to the irritant. With the injection of large quantities of bile there are more frequently than before little wave-like movements, although he does not feel sure that this is the result of the bile injected.

Drs. Hallion and Netter[2] have studied the influence of bile on the peristalsis of the intestine. They operated on dogs curarized or narcotized by chloralose or by morphine and chloral. By a small buttonhole in the small (mainly in the duodenum) intestine they introduced a balloon which was connected with a water manometer by means of rubber tubing. The balloon was flexible rubber and mounted upon a metal tube perforated by a large number of lateral openings, which prevented bends of the balloon upon itself. The water manometer was connected with a Marey tambour, which inscribed the movements. After the balloon was inserted the abdomen was closed by a suture and the movements registered for more than an hour, so that subsequent curves produced by the bile could be closely

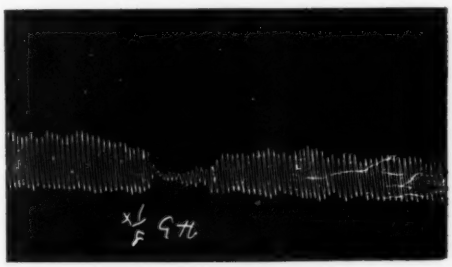

FIG. 1.—Rabbit, small intestine, Magnus method; ⅓ gtt. of bile inhibits intestinal peristalsis momentarily and decreases peristalsis. Read from left to right.

FIG. 2.—Lowest line normal (balloon method); second line shows the effect on small intestine of injection per jugular of ½ drop of bile. The long curves are due to respiratory movements. Rabbit.

compared. The bile was injected either into the blood or into the intestine. Ox bile was used, concentrated by desiccation at a low temperature, but subsequently when used diluted to its original volume by water. Then 10 Cc. of bile was injected into the rectum. At the end of four minutes repeated movements of defecation ensued, followed by an irregular rhythm for eight

[1] *Centralblatt für Physiologie*, 1899, p. 49.
[2] *Comptes Rendus de Biologie*, 1907, pp. 182 and 254.

minutes. The intravenous injection of bile (3 to 7 Cc.) was by the saphenous vein. There was produced a marked diminution of peristalsis and a relaxation of tonus in the small intestine. Immediately afterward the contractions increased considerably and the tonus was greatly increased. Bile put in contact with the intestinal mucous membrane exercises a local excitomotor effect upon the small intestine. Intravenously it causes the same effect, and this last effect is at least in part due to an exaggeration of the bile secreted by the liver due to the cholagogue influences of the injected bile.

Dr. Albert Schüpbach,[1] working in the Hallerianum under Professor Asher, has studied the effect of bile on the movements of the small intestine. Dr. Schüpbach made experiments with a Vella fistula in two dogs, also upon the rabbit's large intestine *in situ*, and by the Magnus method with the isolated intestine of the cat, and also upon the rectum in dogs.

In the dogs with Vella fistula he made experiments with a ball of sealing-wax, with a thread attached to a little weight. The bile was injected into the intestine. He also found that psychic irritations by holding ham near the nose of the animal excited increased peristalsis. When the bile was injected into the intestine he noted how fast the ball moved in the intestine. The bile was mixed with physiological salt solution, or with milk, or with water. He also used the Magnus method on excised intestine.

He concludes that bile in the dog either has no special influence upon the small intestine in normal conditions, or in many of the cases has an inhibitory effect. In the case of the implantation of the gall-bladder into a Vella fistula, the gall of the dog had no special effect upon the peristalsis of the small intestine. In a state of hunger, and at different hours after taking nourishment, the action of the bile was indifferent or a weak inhibition of peristalsis ensued.

In rabbits under ether and morphine, the small intestine *in situ*, the bile acted in an inhibitory manner. The excised cat's intestine was inhibited by bile. The large intestine of the rabbit *in situ* had its peristalsis increased by bile. When through an injection of gall the large intestine had increased peristalsis, the small intestine remained quiet. Bile injected into the rectum of the dog called out defecation.

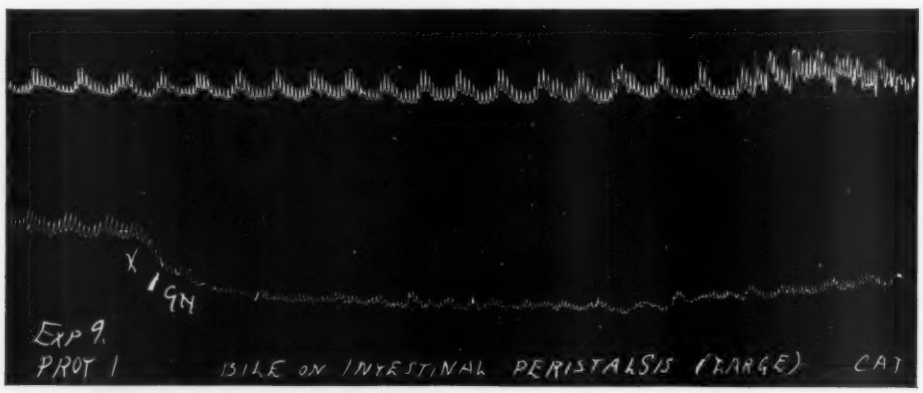

FIG. 3.—Effect of 1 drop of bile per jugular on large intestine of cat. Balloon method. The long curves are due to respiratory movements.

Our experiments were made upon etherized rabbits and cats. These were thirty-eight in number. We used two methods in the study of intestinal peristalsis. The first one was that of Magnus on the excised intestine in a modified Ringer solution with oxygen bubbling through it. The other was the insertion of a rubber balloon into about the middle of the jejunum in the small intestine, or in the ascending colon of the large intestine. This was connected with

[1] *Zeitschrift für Biologie*, Band xxx, pp. 1-41.

the delicate piston recorder of Dr. Schlayer, of Tübingen. The bile used was that of the cat and rabbit.

Effect of Bile on Small Intestine.—With the method of Magnus small and large doses locally applied decreased peristalsis. In one case, a cat, there was with one-eighth of a drop an increase of tonus and a slight augmentation of peristalsis. In the balloon method, bile given per jugular or injected into the lumen of the intestinal part experimented upon decreased peristalsis. In the rabbit, with one-eighth of a drop by the Magnus method a temporary, well-marked inhibition of peristalsis was seen, with a decrease of extent of peristalsis (Fig. 1).

Effect of Glycocholic Acid on the Small Intestine (Fig. 4).—In the cat, by the balloon method, three-quarters of a grain of glycocholic acid per jugular increased the tonus and increased the extent of the peristaltic movements. In other cats, one-half grain of glycocholic acid decreased peristalsis, using the balloon method and injecting the acid per jugular.

In the rabbit, 1/128 of a grain of glycocholic acid by the Magnus method greatly decreased the tonus and peristalsis.

Effect of Glycocholic Acid on the Large Intestine.—In the rabbit, glycocholic acid by the balloon method in one-half grain doses per jugular decreased peristalsis. In a

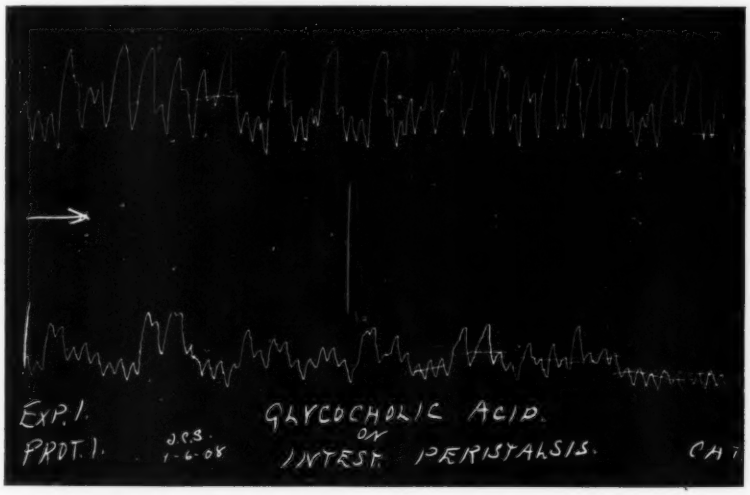

FIG. 4.—Effect of glycocholic acid on small intestine of cat. Balloon method; ¾ grain per jugular. Lowest line normal; line above shows increase of peristalsis by the glycocholic acid.

In a cat by the balloon method, one-half a drop per jugular increased peristalsis. In a rabbit, one-quarter of a drop by the jugular produced a decreased peristalsis with the balloon method (Fig. 2).

Effect of Bile on the Large Intestine (Fig. 3).—The effect of bile on the large intestine by the Magnus method was to decrease tonus and peristalsis of the intestine. In rabbits there was occasionally, after 1/16 to 1/32 of a drop of bile by the Magnus method, greatly increased peristalsis. In the balloon method bile in the cat per jugular in doses of a drop decreased tonus and peristalsis at first, and afterward greatly increased them.

rabbit and a cat it increased peristalsis, producing quite large waves.

Effect of Taurocholic Acid on the Small Intestine (Fig. 5).—In the cat, one-half grain of taurocholic acid greatly increased peristalsis by the Magnus method. In the rabbit there was a momentary increase of tonus by the Magnus method.

In the rabbit, with 1/16 to 1/2 grain of taurocholic acid there was by the Magnus method a great decrease of tonus and peristalsis.

By the balloon method, 1/4 of a grain of taurocholic acid per jugular in the cat increased peristalsis after a temporary decrease.

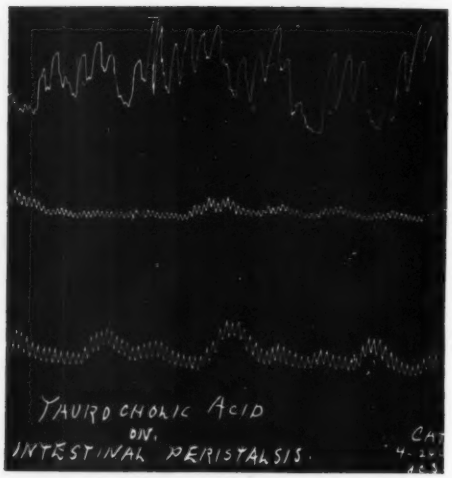

FIG. 5.—Effect of taurocholic acid ¼ grain per jugular on peristalsis of small intestine. Base line normal; second and third lines show effect of taurocholic acid. Balloon method; cat. Read from left to right.

Effect of Taurocholic Acid on the Large Intestine.—By the Magnus method, 1/2 grain of taurocholic acid decreased peristalsis and the tonus of the large intestine. In the rabbit, 1/4 to 1/2 grain of taurocholic acid by the Magnus method greatly decreased tonus and peristalsis.

There is no doubt that either with the excised intestine or with the balloon method,

EXPERIMENT 1.

Bile on Heart and Blood-pressure—Cat.

TIME—P.M.	Rate 15 seconds.	Blood-pressure, mm. Hg.
2.00	45	158
2.01 ¼ gtt. bile	45	156
2 02	43	160
2.08	43	156
2.10	45	150
2.10.30 ¼ gtt.	46	154
2.12	46	156
2 18	48	160
2.20	47	160
2 20.10 ½ gtt.	49	158
2.22	50	160
2.27	50 (clot)	158
2.35	56	144
2.35.30 1 gtt.	54	142
2 37	57	150
2.43	64	142
2.45	56	140
2 45.10 2 gtt.	54	128
2.47	55	138
2 53	57	128
2.55	64	130
2.55.10 2 gtt.	68	110
2.57	56	124
3.03	56	124
3.05	55	122
3.05.10 4 gtt.	58	80
3.07	58	104

EXPERIMENT 2.

Taurocholic Acid—Cat.

TIME—P.M.	Rate 15 seconds.	Blood-pressure, mm. Hg.
2.00	45	132
2.00.15 ¼ grain.	43	130
2.02	42	132
2.05	44	132
2.10	44	134
2.11	43	134
2.11.20 ¼ grain.	45	124
2.12	43	132
2.15	40	130
2.20	42	130
2.21	40	132
2.21.20 ½ grain.	44	112
2.22	43	116
2.25	43	130
2.30	41	130
2.31	40	126
2.31.10 ½ grain.	47	104
2.32	45	120
2 35	40	124
2.40	40	122
2.41	40	124
2.41.30 ½ grain.	43	100
2.42	42	118
2.45	42	124
2.50	39	120
2.52	35	116
2.57	35	114
3.02	35	113
3.07	36	114

EXPERIMENT 3.

Glycocholic Acid on Circulation—Rabbit.

TIME—P.M.	Rate 15 seconds.	Blood-pressure, mm. Hg.
3.00	45	118
3.00.40 ½ grain.		
3.01	42	115
3.02	46	115
3.06	46	110
3.08	47	110
3.08.10 ¼ grain.		
3.08.30	45	106
3.09	46	110
3 14	42	108
3.16	42	108
3.16 30 ¼ grain.		
3 17	42	106
3.21	43	110
3 23	43	114
3.23.30 ½ grain.	44	90
3.24	42	110
3.26	30	96
3.28	47	104
3.30	44	108
3.30 15 ½ grain.		
3.31	45	96
3.35	31	84
3.37	34	104
3.37.30 1 grain.		
3 38	48	64
3.38.30	40	80

where the nerves of the intestine are attached, bile from 1/32 of a drop to 4 Cc. primarily inhibits peristalsis and afterward may or may not increase peristalsis. The taurocholic and glycocholic acids have the same action as the bile itself. The experiments upon the pulse-rate and arterial tension show that bile after a few doses

reduces the tension. Taurocholic acid reduces the heart-beat and the blood-pressure. Glycocholic acid reduces the blood-pressure, but does not materially alter the pulse-rate.

From an examination of our results it is apparent that bile has contradictory effects upon the small and large intestine. It is evident that with either the Magnus method or the balloon method the results are antagonistic. Dr. Schüpbach believes that this may in part be explained by a psychic reaction on the intestine in his experiments. It will not, however, explain the contradictory effect in the case of the excised intestine. In 1884, in a paper on "Intestinal Peristalsis," Ott called the ganglia in the intestine "intestino-motor" and "intestino-inhibitory." It is probable that these ganglia have a varying antagonistic effect, and as one or the other is in the ascendant we have an increase or a decrease of peristalsis by the bile. It is evident that the circulatory changes did not have any part in the changes in intestinal peristalsis.

The tables on the preceding page show the experiments upon the circulation.

A METHOD OF PROTECTING ABDOMINAL WOUNDS AGAINST INFECTION BY MEANS OF A PERITONEAL TUBE, WITH ESPECIAL REFERENCE TO ITS USE IN CONNECTION WITH THE GRIDIRON OPERATION IN SEPTIC CASES.

BY GASTON TORRANCE, M.D.,

Surgeon to St. Vincent's and The Hillman Hospitals, Birmingham, Alabama.

In many cases of appendicitis where a small amount of pus or a gangrenous appendix is found the most serious condition we have to deal with is the abdominal wound—*i.e.*, to get a closure that will prevent hernia or infection of the fascia or other tissues exposed.

The following operation was devised in the attempt to prevent these complications:

The ordinary "gridiron" operation is done, and the peritoneum is then caught up and incised in the line of the skin incision; each side of the peritoneal wound is then drawn out and sutured to the skin on both sides with a running suture of catgut or a few interrupted sutures. Retractors may then be put in and the adhesions broken up and the appendix removed; one or two small drains are now placed, and each end

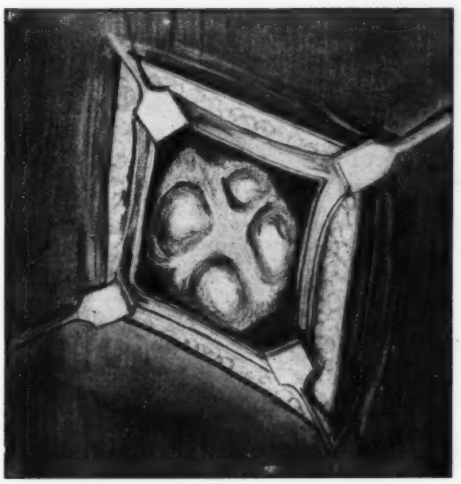

FIG. 1.—Shows "gridiron" incision exposing the head of cecum and partial retraction of peritoneum for suture to skin.

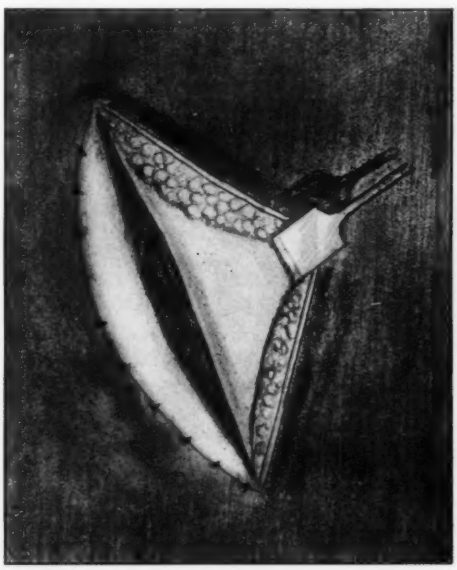

FIG. 2.—Shows peritoneum sutured to skin on outer side of wound and being retracted for suture to the inner side.

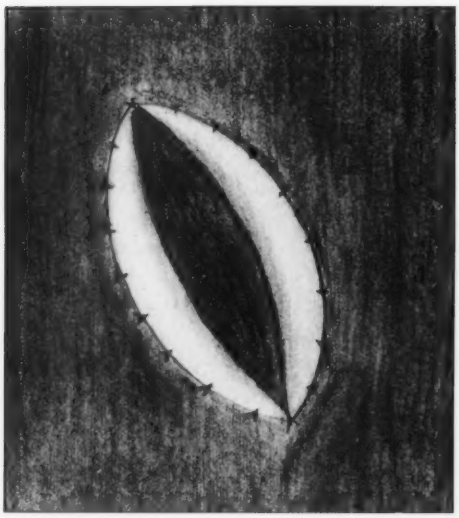

FIG. 3.—Shows peritoneum sutured all around the wound, ready for the removal of the appendix or opening up of the pus cavity to be drained.

of the incision closed around them by means of one or two through-and-through silkworm-gut sutures.

To insure better approximation of the deep layer of muscles a silkworm-gut suture may be placed on either side of the skin incision before the peritoneum is opened, and left to be tied when the operation is completed.

The small wound gives better drainage

FIG. 4.—The appendix has been removed, two small wick drains passed down for drainage, and the wound partially closed at each end by through-and-through silkworm-gut sutures.

than when the wound is left wide open and packed with gauze—this is demonstrated by the stab wound above the pubis—and the peritoneal lining to the wound offers less resistance than do the various layers of muscle, fascia, etc.

I have used this method for suprapubic drainage of the pelvis; in doing a colostomy

FIG. 5.—Peritoneal drainage tube in "gridiron" appendix operation. Photographed two weeks after operation. Gangrenous appendix case.

for amebic dysentery; in draining the gall-bladder; and after removing a gangrenous appendix in a patient fifty-nine years of age, who left the hospital at the end of two weeks with a small drain in place and the wound in good condition, as shown in Fig. 5. Six weeks after operation the wound was perfectly closed and seemed as strong as when the "gridiron" operation had been done in a clean case.

EDITORIAL.

SHOULD FEVER BE TREATED?

For many hundred years the medical profession was prone to sadly confuse diseases and symptoms, and so not infrequently directed its energies against conditions which had no bearing upon the true nature of the malady. At the present time it is, of course, a fact that a large part of our treatment has to be symptomatic, and in a very considerable number of diseases we have no drugs or remedial measures which can be said to influence the morbid process itself by any direct effect. It is, however, important in devoting our attention to the relief of those symptoms which may be troublesome that we should not neglect to search for the underlying cause, and if possible remove it. The number of cases of cardiac and uremic dyspnea, for instance, which have been treated as spasmodic asthma because the physician did not thoroughly investigate the cause of the dyspnea is probably very large.

One of the symptoms of most, if not all, of the infectious diseases which receives a very large amount of attention from the active practitioner is the condition known as "fever." It may be stated at the outset that the study of the febrile process in an ailing individual is always of importance, not so much because it is a symptom which needs treatment as because it is a sign-board which gives us certain information in regard to the severity and duration of the malady. Many of the readers of the THERAPEUTIC GAZETTE will recall the fact that twenty years ago practitioners considered the reduction of a febrile temperature, in the course of all the acute infections, was one of the most important functions that fell to their lot, and for this reason antipyrin and a host of other coal-tar derivatives were employed in immense quantities. As a result of scientific research this enthusiasm in the reduction of moderate febrile temperature soon received its quietus, and these drugs are comparatively rarely used to-day for their antipyretic effect.

As a matter of fact there is much evidence to indicate that fever, when it is within moderate bounds, and is not continued for too long a period of time, may be a distinct advantage to the patient in enabling him to combat infection. As long ago as the time of Hippocrates that writer expressed the belief that fever was a protective process, and within recent years much has been done which seems to indicate that he was quite correct in this view.

Thirteen years ago the writer of this editorial contributed to the THERAPEUTIC GAZETTE an article in which he gathered together considerable evidence along these lines under the title of "The Rôle of Fever in the Modification of Disease," and we note with considerable interest that Sir Richard Douglas Powell in an address at Guy's Hospital on October 8, 1908, reported in the *Lancet* of October 17, 1908, takes pains to still further support this view. As he well says, "the temperature in all active diseases had become the object of attack—a criterion of hope and fear. One became obsessed on the one hand by a magnified importance assigned to mere temperature, and on the other by an inadequately appreciated efficacy of a new class of remedies. Practitioners got into the habit of chasing the temperature around the dial with antipyretic remedies." This somewhat vivid description of the methods of twenty years ago is quite correct, although, as Sir Richard points out, the fact was then well known that the specific organism in most of the acute diseases, such as tuberculosis, anthrax, pneumonia, influenza, enteric fever, and perhaps rheumatism, multiplied at about blood heat and that their increase was retarded or arrested by fever at about or above 104°.

Sir Richard also asserts, what must be evident to every practitioner on careful thought, that pyrexia is a normal reaction

to toxic invasion and that the rise of temperature is a symptom as proper to certain diseases as a normal temperature is to health. In the address to which we here referred as appearing several years ago it was shown very conclusively that fever is a condition developing in all healthy animals as soon as they undertake to resist infection, and also that in those cases in which the infection is so overwhelming that the animal does not have a chance to resist no fever occurs. It has also been shown that if animals which receive a moderate infection develop fever they survive, but if the same dose of infection is given, and fever is prevented by artificial means, they die as promptly as if large doses were used; and, lastly, when an animal is immunized by repeated doses of toxic material it develops a febrile movement after each dose, but when it has become immune such doses no longer render it febrile. It will be recalled, too, that as long ago as 1895 Leowy and Richter showed that if a temperature of 106° was produced by puncture of the corpus striatum by the Sachs-Aronsohn method the animal became much more resistant to infection with the bacillus of diphtheria, the pneumococcus, and the coccus of erysipelas than were ordinary animals, and this notwithstanding the fact that it had been subjected to the trauma of the operation. They also found that the ratio of survival after infection was in direct proportion to the height of the fever induced.

There are a host of other experiments which prove that if a healthy animal's temperature is reduced by cold, or other means, it immediately becomes more susceptible to infection. The increased resistance produced by febrile temperatures is probably due not alone to the fact that certain microörganisms find the body a less favorable site for growth when the temperature is febrile than when it is at the normal level, but also to the fact that increased heat acts as a stimulant to all vital processes, causing not only a quickening of the circulation and respiration, but an increased activity in cellular development and break-down and in oxidation processes. It is as if the fires of oxidation were made hotter with the object of burning up, or oxidizing, poisons produced by invading microörganisms, and, for all we know, a febrile temperature may also stimulate phagocytosis and the other more complex methods by which the body resists infection. This is indicated by the very great increase in the number of leucocytes which are found in the blood in the early stages of almost all febrile infectious maladies. Whether the leucocytosis is the result of the fever, or simply a coincident condition developed by the body to aid the fever in the combat, is a question which, so far as we know, has not as yet been determined. Probably the increase is a coincidence rather than the result.

The administration of drugs for the reduction of fever, if the coal-tar antipyretics are employed, therefore takes away from the body the heat which is protective in its influence and also throws upon the eliminating organs the burden of eliminating the drugs themselves, or their educts. While it has not been proved that these drugs diminish leucocytosis, they certainly do not increase it.

It is interesting in this connection to note that the objections which exist to the reduction of febrile temperatures by the use of antipyretics do not hold good in regard to the employment of cold in the treatment of febrile processes. In the first place the use of cold, if it is properly applied, does not increase the burden of the eliminating organs by giving them drugs which may be deleterious in their influence, and in the second place it is now a well-recognized fact that the study of the body temperature, when the patient is treated by cold bathing, is chiefly to determine the influence of cold upon the organism in general rather than because we consider the fall in temperature particularly advantageous. Indeed, it is probable that the cold bath, as it is commonly employed in typhoid fever, while it may abstract a large amount of heat from the body actually stimulates the heat-producing organs to greater activity, or, in

other words, actually increases production and stimulates oxidation processes, thereby aiding the body in combating infection, in destroying toxins, and by the improvement in the circulation aiding in the elimination of poisons. In other words, it is recognized to-day that the benefit of the cold bath is not so much the temperature reduction as it is the restoration of circulatory equilibrium. The difference in the activity of all the functions of the body, which can be seen with the eye or felt with the fingertips, when the cold bath is used is indicative of the increased functions which are probably developed in parts not so readily observed. To express the matter crudely, yet graphically, antipyretic drugs bank the fires, cut off the draughts, and so arrest oxidation processes and decrease vital activity, whereas cold bathing opens the draughts and increases combustion. The difference between a case of typhoid fever, the temperature of which is controlled by the antipyretic drugs, and the case in which it is controlled by, or, to speak more clearly, influenced by, cold bathing is so striking that once seen it can never be forgotten.

OXYGEN AS AN AID TO MUSCULAR EFFORT.

The excellent work done by Mr. Leonard Hill, of London, upon the effect of anesthetics, and upon the physiology of the circulation, makes anything which he may write in connection with physiology or with physiological therapeutics interesting and worthy of attention. Recently he has carried out a series of experiments to determine whether the inhalation of pure oxygen gas is capable of increasing the muscular ability of athletes and animals.

It has long been the custom of the profession to administer oxygen to those who were suffering from dyspnea, but we have repeatedly pointed out that this gas could only be expected to be of value when the dyspnea was dependent upon some mechanical difficulty which interfered with the obtaining of enough oxygen in the atmospheric air, and that it cannot be useful (theoretically, at least) in patients who are dyspneic because of hemorrhage or profound anemia.

The studies carried out by Hill and Martin Flack included observations made upon a well-known athlete who attempted to swim the English Channel, and who failed one-quarter of a mile from his destination through extreme cold, and also upon a number of men and horses, some of which were work-horses and some thoroughbred race-horses. It was found that if the swimmer, when hard-pushed for breath, nervous, and seemingly exhausted, inhaled oxygen gas through a mouthpiece provided with inlet and outlet valves, a general improvement at once became manifest, in that the dyspnea disappeared as well as the nervous symptoms and anxiety. They noted that this swimmer was able to inhale such large quantities of the gas that for a time it was thought there must be a leak in the tube or in the bag containing the gas. In the case of the work-horses, the animals which climbed a hill with a heavy load and arrived at the top winded and panting, could, after the use of oxygen for ten minutes, go up the hill once more with the same load at a greater speed, and arrive at their destination comparatively comfortable. In the case of race-horses it was found that the inhalations of oxygen were of no value in quickening their speed unless the race was so long and so severe that their supply of oxygen in the residual air of the lung and in the blood was impaired.

Continuing his studies upon men, and making his chief observations upon himself and two working-men, Hill found that all three were capable of doing more work in a given space of time when inhaling oxygen than when inhaling atmospheric air. In Hill's own case he found himself able to ride hills on a bicycle after breathing oxygen which he could not ride without this aid, and in the case of a Marathon runner he found that after he had run five miles oxygen quickened his speed to such an extent that he was able to

make the next three-quarters of a mile in 38 seconds' better time.

As the result of Hill's investigations he suggests that oxygen inhalations should be of value in people who are fat and scant of breath, in those who overeat, take too little exercise, and in cases of emphysema and heart disease. He also suggests that its use in tropical climates will make exercise easier, and that men exhausted by severe mental work and worry can put themselves in trim for a bicycle ride, and improve their circulation and appetite, by the inhalation of oxygen.

That this increased physiological activity which the inhalation of oxygen seems to produce is due to any direct stimulant effect upon metabolic processes seems unlikely. Durig has shown that in resting an excess of oxygen has no influence on metabolism, and Hill thinks that this is true in work-horses or man so long as the supply of oxygen in the air is adequate to supply the muscles and the heart. But when the demands of the muscle, because of severe exercise, are greater than the lungs can meet by obtaining supplies from the atmospheric air, then the inhalation of oxygen is advantageous. Perhaps this is one of the reasons why oxygen inhalations in cases of pneumonia sometimes seem very advantageous, since the patient has oftentimes been using violent exercise in an endeavor to gain enough oxygen from the air, with the result that he is not only dyspneic because of impaired pulmonary capacity, but also short of oxygen from his exertions.

The use of oxygen inhalations by athletes for the purpose of increasing their endurance and speed can hardly be considered as within the realm of good sport, particularly if the gas is taken beforehand to enable the individual to hold his wind in a comparatively brief but severe test, as in a half-mile run. Whether it is justifiable for an athlete to inhale oxygen during a trial of speed or endurance which lasts for a number of hours depends largely upon whether his opponent uses the gas also, and upon whether he is attempting to establish a record without adventitious aid.

THE BEST METHOD OF EMPLOYING ARTIFICIAL RESPIRATION.

For many years it has been a fact well known to every one that in cases of drowning, and in other instances in which there is serious impairment of the respiratory function, the performance of artificial respiration may save life, and the question of chief interest is what is the best method to be employed, the best method, of course, being that which not only provides the patient with an adequate inflow and outflow of air, but also one which is practically possible under the conditions in which artificial respiration has to be carried out. There can be no doubt whatever that the so-called Sylvester method, in which the physician kneels beyond the head of the patient and draws the arms up above the head, then bringing them down again in such a way as to compress the floating ribs, causes full respiratory movement, but when the physician attempts this upon a patient semi-conscious or unconscious he finds that the arms are so heavy and flaccid that it is only by the greatest physical effort he can go through the movements which are required, and in a very few minutes even the most powerful operator finds himself so exhausted that it is almost impossible for him to maintain the effort. The Marshall Hall method, which consists in rolling the patient from his side on his back and then expelling air from his chest by pressing upon the chest, also requires the expenditure of a tremendous amount of energy, and it has been shown that this method does not cause as free a flow of air in and out of the chest as the Sylvester method—in other words, it is often inadequate. A number of years ago the writer of this editorial carried out with Dr. Martin an original research upon this subject, in which careful studies as to the actual volume of air which passed in and out of the chest when different methods of artificial respiration were employed were made, but it was never published.

We have read with much interest remarks made at a recent meeting of

the American Medical Association by Schäfer, of the University of Edinburgh, in regard to the employment of a method which he advocates and to which he gives the name of the "prone-pressure method." This method consists in placing the patient in such a way that he lies upon the anterior aspect of the body with the head turned a little to one side, so that the face is not buried in the mattress upon which he is lying. The arms of the patient are at right angles to the body, with the forearms at right angles with the arms. The physician then kneels astride, or just to one side, of the patient, places his hands upon the floating ribs at about the posterior axillary line, and compresses the chest in such a way as to drive out the air which has already been used. He then removes the pressure, and the natural elasticity of the chest results in expansion, which draws a quantity of the air into the thorax. Careful measurements have proved that this quantity is adequate for the needs of the system. Not only does this method save the strength of the operator, but it also has the great advantage that, while it is being employed, it is easy for mucus and the liquids which may be in the upper respiratory passages to escape, whereas when the patient is in the dorsal position the inspirations tend to draw fluids into the finer bronchioles. Dr. Schäfer believes that this method is an exceedingly good one in the treatment of accidents during the administration of anesthetics. We also note that incidentally he highly recommends a method which we have always advocated, namely, the administration of a full dose of atropine, hypodermically, before chloroform or ether is given the patient.

THE LIMITED VALUE OF AN OLD PHARMACEUTICAL PREPARATION.

For many years almost every drug store that prescribes for patients over the counter—and what drug store does not?—has kept upon its shelves a so-called tonic preparation known as "Beef, Wine, and Iron," a name skilfully devised to attract the attention of the laity, who would be impressed with the thought that these three ingredients form a tripod upon which they may well rest their hopes of improved health. With our increasing knowledge it has become more and more evident that large doses of iron are valuable in a very limited class of cases, and that in the vast majority of instances fractional doses of this substance produce far better results than the large doses of our forefathers. It has also become evident that iron is only of value when an examination of the blood shows that it is distinctly below normal in its hemoglobin content, and the value of wine as a universal tonic is considered to be much less than it was thought to be a few years ago. Indeed, it is highly questionable whether wine, except in certain cases of exhaustion, is of any value whatever as a tonic. The beef which "Beef, Wine, and Iron" is supposed to contain is, of course, not beef at all, nor even the albuminous portion of beef, but almost entirely the salts or extractives, which are in no sense distinctly nutritious, and which, on the other hand, often throw upon the kidneys the burden of eliminating an excess of those materials which are often developed in the body both in health and disease. It is true that these meat extracts may exercise a slight tonic or stimulant influence for a short period, but they are in no sense tonics in the way in which this term is carelessly employed—that is, they have very little if any influence in building up tissues or improving general nutrition.

It is evident, therefore, that the use of the word "beef" on the label of such a preparation is most questionable, as has been recently pointed out by Mr. Street in an article which he has contributed to the *American Journal of Pharmacy* for August, 1908. Furthermore, it is interesting to note that a careful analysis made by this investigator and two assistants has shown that the labels on many preparations of so-called beef, wine, and iron are distinctly errone-

ous, as, for example, the statement that half an ounce of the preparation contains the strength of one ounce of beef, or that one fluidounce contains one ounce of the essence of beef. Those labels which state that the preparation contains extracts which represent the strength of one-half ounce of lean beef are also deceptive, although more nearly correct.

In Street's analysis he found sixty-nine samples of so-called beef, wine, and iron below the strength required by the National Formulary; twenty-nine were also misbranded; and only twenty-two samples out of ninety-two satisfied the calculated National Formulary requirements of 7 milligrammes of nitrogen per fluid gramme. It is only fair to state that the responsibility for part of this deficiency rests upon the method advised by the Formulary for the preparation of this semi-proprietary article, and also depends in part upon the quality and quantity of the meat or the meat extract employed by the druggist.

Even if these analyses had not revealed the fact that most of the preparations sold under this name were weaker than they should be, it is evident that this preparation does not deserve the support of the profession, and that its counter-prescribing by druggists should be discouraged as much as possible.

THE TREATMENT OF CANCER OF THE GENITO-URINARY ORGANS.

The almost certain recurrence which has heretofore followed nephrectomy as practiced for the removal of cancerous kidneys and the comparatively long survival of patients upon whom such a diagnosis was made, but upon whom operation was not performed, have led some surgeons to advise against surgical intervention when a probable cancer of the kidney had reached sufficient development to make the diagnosis certain. Thus Legueu (*Annales des Maladies des Organes Génito-urinaires,* vol. ii, No. 20, 1908), before the Second Congress of the International Society of Surgery, notes that all complete lumbar nephrectomies for cancer of the kidney, but one, exhibited a recurrence within twenty-four months; whilst of two incomplete lumbar nephrectomies in which diseased glands were detected at the time of operation, but were left in place, one survived for eighteen months and another for more than three years. Recurrence is generally local, and in one instance was noted in the skin; commonly in the fatty capsule which had been left. Recurrence, however, occurred even when the fatty capsule and neighboring involved glands had been removed. Of the six transperitoneal nephrectomies, four recurred within two years; two could only be traced for eleven and fifteen months respectively. Twice there was recurrence at a distance, in one instance secondary to a hypernephroma, death occurring two years later with pulmonary metastasis, and in another case death occurred eight months after operation, with profound cachectic symptoms, the point of recurrence not having been determined.

Eiselsberg notes that of 13 cases subject to nephrectomy 8 died from two to thirty-four months after operation. Of the remaining number but one has reached the fifth-year limit. Of 400 cases collected by Forgue, 29 could be enumerated that remained well for four years after operation. Four of these were children. Should the period of probation be raised to five years this figure drops to 18. Discouraging though these figures are, the 18 apparently cured cases must be considered as redounding to the credit of surgery, as without surgical intervention they would all have perished without doubt. The basis of surgical intervention which has a fair prospect of ultimate success must be, as pointed out by Legueu, an early diagnosis and a massive removal. Either alone is likely to be ineffective. By massive removal is meant the extirpation of the kidney, together with its fatty capsule, its associated lymphatic glands, and the suprarenal body. Legueu prefers for this the Gregoire incision. The patient is placed

in the flexed dorsolateral position, an incision is carried from above the middle of Poupart's ligament toward the anterior superior iliac spine and vertically upward to the costal border, and backward along this for a distance of 5 or 6 centimeters. This cut is carried down to the peritoneum, and the latter is stripped from the posterior abdominal muscles of the iliac and the lumbar fossæ. The perirenal fibrous capsule is cut in its outer border and the fatty capsule is stripped from its anterior and posterior attachments without being cut or torn, until the vascular pedicle of the kidney is reached. This, if the tumor be voluminous, is ligated, after which the ganglia are ablated. If the tumor be small the ganglia are taken with it in one mass, including the suprarenal capsule. The involved glands will be found in the right side around or behind the vena cava; in the left side in contact with the aorta, between the celiac axis and the inferior mesenteric vessel. Legueu states that in Paris two such operations have been performed, one for hypernephroma without ganglia, and the other because of a cancer with involvement of the ganglia. Neither of these have exhibited recurrence, though the time is too short to determine whether or not the cure will be radical. The procedure is, however, that which is indicated by the experience with cancer in all other regions. Because of the difficulty of early diagnosis it is improbable that radical cure will ever be as successfully accomplished as is the case, for instance, in cancer of the breast. That the percentage of radical cure will be larger than at present is, however, certain.

In considering cancer of the bladder, classing under this term both carcinoma and sarcoma, it is interesting to notice that Legueu reports almost the same fatal tendency to recurrence as in the case of renal cancer, which he attributes again to late diagnosis and incomplete removal. He points out that remote metastases are late and rare; that the recurrence occurs at the point from which the cancer was removed, and that this inevitably is due to the fact that cancer cells were not all removed. Hence the necessity of early diagnosis, and this once framed a wide removal, including all the thicknesses of the bladder walls. This is perfectly practicable and usually simple, excepting when these neoplasms involve the bladder base near the ureteral orifices.

As to cystectomy for cancer of the bladder, this he holds is rarely justifiable. The immediate mortality is high, and of the thirty-one cases reported, but two were alive at the end of the first year.

Concerning malignant disease of the prostate, enucleation by the perineal route is regarded as the one most practicable, the technique perfected by Young being looked on as the best, though the prognosis as to recurrence is about as gloomy as that of cancer of the bladder and kidney.

Cancer of the urethra, which has been subject to a variety of operations, has recurred even after total emasculation.

The ultimate results of operation for cancer of the penis, with the exception of sarcoma, are fairly satisfactory. Amputation is considered a better operation than total ablation, and should be accompanied by extirpation of the inguinal glands on both sides.

Concerning tumors of the testicle, Legueu states that the prognosis can be outlined by the result of histological examination. Mixed tumors which do not present microscopic evidence of malignant degeneration should present no recurrence. Those which present but few degenerative points may remain permanently well. Those which are frankly malignant almost inevitably recur, cure being most exceptional.

ESSENTIAL INCONTINENCE OF URINE.

By this term is meant incontinence either diurnal or nocturnal, or both, independent of demonstrable lesions either of the nervous system or of the genito-urinary tract—a condition, at one time fairly common, which has become, thanks to greater diagnostic skill, extremely rare.

It is now generally recognized that incontinence is a common expression of urethral obstruction, whether from congenital or acquired stricture, new growth, or prostatic enlargement; that it is an occasional expression symptomatic of pyonephritis; that it is sometimes in the adolescent an early symptom of renal tuberculosis; that in some instances it is the single symptom which attracts attention to a nocturnal epilepsy; that aside from spinal lesions it is an occasional symptom of hysteria; and that it may be reflexly excited by a variety of genital or rectal lesions. None the less cases of incontinence in which direct causative or reflex exciting abnormal conditions cannot be demonstrated exist, and Bazy and Deschamps (*La Tribune Médicale,* No. 42, 1908) quote a number of opinions as to the exciting factors, among them micturition dreams, insufficiency of the urethral sphincter, urethral anesthesia, psychopathic degeneration, spasm, hypersensibility of the sympathetic system, and, finally, thyroidal insufficiency.

An ingenious theory, but not absolutely convincing, is based on what might be called the temperament of children. Bazy and Deschamps hold that the incontinent may be grouped in two classes, the first the exuberant and the second the languid. The exuberant continue during the night those actions to which the day is given up, including micturition, which becomes involuntary, because such children are so filled with the joy of playing that they cannot stop even for the time required to find a suitable place in which the voiding of urine can be appropriately performed.

The second class, made up of the lazy and languid, are so plunged in a delightful tranquillity that the effort to either drop their clothing or rise from the bed is too great, and the urine is voided as the inclination comes.

There is, also, an autosuggestive class in whom the incontinence develops after having heard of its existence in others, and, finally, the degenerates and criminals who are incontinent because of an imperfect nervous organism.

Every method of treatment yet devised —and there are hundreds of them—has been followed by success because the condition is one which is essentially influenced by suggestion. Among the various treatments employed are punishment, the application of compressors and obturators, the adoption of an uncomfortable bed which prevents profound sleep, abstention from drinking during the evening hours, regular waking of the patient and forcing him to urinate, the employment of urethral dilatation and injections, hydrotherapy, and massage.

Of the medicines employed belladonna, atropine, antipyrin, and chloral have had the greatest vogue. Strychnine, ergot, rhus aromatica, and alkaline urinary antiseptics have been found useful. Electricity in the form of the interrupted faradic current has cured many cases. The same may be said of psychic treatment by means of suggestion or hypnotism. More recently the epidural and presacral injections advised by Cathelin and Jaboulay have been employed with success.

Le Fur regards as a most important therapeutic measure the education of the muscles concerned in micturition. From this, judging by the remarkable results achieved by Alexander in his after-treatment of cases of incontinence involving prostatectomy, much can be expected.

Genouville describes an apparatus which for its ingenuity at least is worthy of consideration, though he modestly disclaims originality. The apparatus consists of a battery and a bell. The two poles of the battery are separated by a layer of absorbent cotton which is so placed in relation to the patient that the first drops of urine moisten this cotton and complete the circuit, upon which there ensues a violent ringing of the bell. The sudden waking is said to stop at once the act of micturition in even the youngest infant. In older children it breaks the habit by educating the sphincters, so that the patient awakes before he urinates rather than after.

Reynès states in regard to the epidural injections that he has employed them for

many years in both infants and adults, and has generally had excellent results after three, four, or five injections. Even where there was recurrence of the trouble, this was cured by repeated injections. There was no complication, and the treatment, if efficacious, is likely to be so at once. The same treatment applied to dysuria was far less satisfactory to him.

As to the peripheral causes of incontinence, Hamonic states that he has performed 187 circumcisions for the sole purpose of curing nocturnal incontinence. Of this number 130 were cured, 47 in the first three weeks and 83 after six weeks. Fifty-seven patients were lost sight of. It is noted that the incontinence rarely disappears immediately after operation. Indeed some months may be required for a complete cure.

Hamonic's theory of incontinence is that there is a hereditary predisposition which reacts to genital irritation, such, for instance, as a vulvitis in little girls, but particularly to an elongated prepuce in boy babies.

Of these various suggestions in regard to the treatment of incontinence there is nothing new, excepting from the standpoint of the education of the sphincter muscles. This, though not absolutely novel, is not recognized by the profession at large as of major importance; none the less it affords the greatest promise of hope in the inveterate cases in which the cause cannot be detected.

REPORTS ON THERAPEUTIC PROGRESS.

ITCHING: ITS CAUSES AND TREATMENT.

In the *Lancet* of September 26, 1908, JAMIESON tells us that in the treatment of itching one cardinal proviso emerges. One cannot treat it solely as a substantive lesion without risk of failure. All the circumstances must be taken into account. The cause has to be diligently sought for, the locality considered, the individual studied, and accessory conditions given due weight. In the cases in which there is itching without definite integumentary disturbance, as in senile pruritus apart from pediculi, some medicated soaps will be found useful. Menthol soap is that most frequently applicable. It acts by substituting the sensation of cold for that of itching, and in mild instances often gives prompt relief. Nicotine as nicotiana soap, as recommended by Taenzer and Unna, deadens the hyperesthesia of the nerve terminals in the epidermis, but it should be employed with caution and never over wide areas, else toxic symptoms may arise. Naphthol soap is indicated in similar states, and not only lessens undue sensitiveness but tends to ward off the attack of parasitic insects. When the surface is dry, with slight desquamation of branny particles, warm baths taken under blood heat and containing some freshly prepared starch jelly, followed, after gentle drying with a soft bath towel, by the inunction of glycerin of starch thinned down by the addition of a double proportion of glycerin, have proved extremely valuable in the hands of the author in climacteric cases. Should these measures prove insufficient we can in most cases of pure senile pruritus obtain a permanent cure by giving a course of subcutaneous pilocarpine injections administered each night and extended over a couple of weeks. This usually restores the sweat-gland system to functional activity, and with the reestablishment of cutaneous exhalation the trouble ceases. The vests worn next the skin should be of silk, Indian gauze, or linen, and over these thicker and warmer ones may be put according to the season of the year or in the case of those whose circulation requires additional protection.

When pediculi are discovered or their presence is strongly suspected, besides washing with carbolic or storax soap, accompanied by a thorough change of body and bed linen, the soil may be rendered

unattractive by directing the patient to wear next the skin, day and night, a muslin or flannel bag containing fragments of rock sulphur. The heat of the body slowly volatilizes the sulphur, it is converted into sulphurous acid by the oxygen of the air, and so provides an atmosphere round the person which acts as an efficient deterrent to the onslaught of the pediculus. It must be borne in mind that the pediculus vestimentorum occasionally attaches its ova to the lanuga hairs; to prevent these hatching and so germinating a fresh colony it is well to rub some ordinary paraffin oil over the trunk and limbs or to anoint with unguentum staphisagriæ for a few days. Neglect of this is the source of the belief in spontaneous generation of lice, and simply explains why the insects so constantly reappear, though all other precautions have been taken.

We cannot disassociate the treatment of itching in eczema from that demanded by the conditions of the disease in each actual case, but as far as possible we ought to combine antipruritic with antieczematous remedies. In eczema the horny layer is soft and porous, and thus deficient in its natural power of resistance. Since it is in the dry and the chronic forms of eczema in general, and again in all varieties immediately preceding or subsequent to apparent cure, that itching most markedly asserts itself, two indications for our guidance emerge. One of these is that the new and delicate epidermis dries very rapidly, and hence minute fissures form in it, and by these cracks the atmospheric air gains access to the deeper strata and so acts as an irritant to the spongy cells. It is in this layer of cells that the cutaneous sensory nerve fibrils terminate, and the unhealthy state of the skin renders these specially sensitive. Thus it follows that lotions, always the simplest and most agreeable preparations to employ, which in drying deposit an impalpable and neutral powder, take the premier place in our armamentarium. The coating in process of formation insinuates itself into the chinks, and not only occludes them but at the same time promotes exsiccation and so diminishes itching. Calamine lotion, with the addition of a drachm of boric or in some cases carbolic acid, here proves very valuable. In the essentially dry forms, perhaps even more useful is one recommended by Boeck of Christiania, which possesses likewise astringent and sedative properties:

> Talci,
> Pulv. amyli,
> Liq. plumbi subacetatis dil.,
> Sol. acidi borici in aqua 1%, āā 100.0;
> Glycerini, 40.0;
> Aq. camphoræ, 250.0.

This should be well shaken before being used, as it is apt to cake owing to the starch, and painted uniformly on with a stiffish paste-brush, since the ordinary camel-hair one is too soft and readily clogs. The lotion will relieve the itching for about four or more hours, and can then be reapplied.

The second indication is to supply pressure, which the loose cells of the extemporized corneous layer do not yet efficiently provide. Hence, where it can be used, Unna's zinc glycerin jelly furnishes this, prevents scratching, advances the cure of the eczema, and obviates itching. The most approved formula runs thus:

> Gelatinæ albæ, 30.0;
> Zinci oxidi, 30.0;
> Glycerini, 50.0;
> Aquæ, 90.0.

The glycero-gelatin so compounded is best dispensed in a narrow and deep tin can. This when placed in boiling water allows the jelly to liquefy rapidly, and when it has reached the consistence of milk it can be conveniently painted on the skin. While it is setting the surface should be touched with absorbent cotton-wool, enough of which attaches itself to form a felt-like coating. This plan is especially serviceable in those localities which have been mentioned as apt, from the thinness of the integument, to be seats of troublesome itching, as the bend of the elbow and the ham.

Weak tarry lotions or varnishes are most advantageously employed in the final stages. Patients admit that their eczema to appearance is well, yet complain bitterly that the itching still continues. Then painting with

a solution of coal tar in acetone may be helpful.

Picis carbonis, f3j;
Benzol, f3iv;
Acetone, f℥ij.

The solution should be filtered to get rid of particles of undissolved tar, and then a clear, brownish fluid is obtained, a thin layer of which is not disfiguring.

In almost all forms of itching in eczema much temporary relief can be got from sopping the part with very hot water for a few minutes, then drying without friction with a fleecy towel. One of the lotions mentioned may be applied immediately to maintain the sedative effect. The itching associated with lichen planus yields, slowly no doubt, to the administration of small and repeated doses of tartrate of antimony in solution, but it is generally allayed by painting with Boeck's lotion, or by smearing the affected parts, if the eruption is limited in area, with cold cream containing a drachm of chloral camphor to the ounce.

The irritation, culminating in itchiness produced by poisonous plants, may be merely erythematous, may proceed to definite dermatitis, with edema, redness and heat, or vesiculation may occur. In all these forms the most appropriate treatment is that accorded to burns from caloric, plus the neutralization of the poison introduced into the skin, which is more or less acrid. Hence something of the nature of carron oil is specially grateful:

Ol. amygdalatum,
Liq. calcis, ää f℥iij;
Zinci oxidi,
Cretæ præparatæ, ää 3iv;
Acidi borici, 3j.

This suits the erythema and the simple dermatitis. Should blisters or bullæ form there is no better way of dealing with the trouble than by dusting freely with a bland powder:

Acidi borici pulv., grs. xxv;
Talci pulv., ℥j,

and enveloping the part in absorbent cotton-wool, secured by a bandage. When the surface has dried up the hard epidermic masses which accumulate must be allowed to separate spontaneously, not picked off prematurely, as is very apt to be done, with a false idea of hastening the cure. With the removal of the cause—cessation of contact with the obnoxious plant—and proper management one might conclude that the irritation would disappear, but this is by no means always the case, and hence prolonged care is frequently necessary to get quite rid of the itching in such cases.

In dealing with pruritus ani one has to remember that the state revealed to us on examination is not the original one. The condition of the neighboring skin has been much altered and modified by scratching, and these secondary phenomena call for special attention. It has been stated that frequently the liver is at fault, and hence hepatic stimulants are indicated. Not, however, those coarse, reputed mercurial cholagogues, as calomel, gray powder, or blue pill, relics of an effete system of indiscriminate drugging, still far too often prescribed, but such as euonymin; bismuth, soda, and rhubarb; or the compound sulphur lozenges of Garrod—mild alteratives, far more efficient than the older and rougher ones. Indeed, in all cases it is desirable to procure, either naturally or artificially, an easy, regular, and soft movement of the bowels, avoiding constipation on the one hand as much as anything approaching diarrhea on the other. This end is reached by sulphur in some combination other than by aloes or cascara. Compound licorice powder, therefore, suits many persons; others do better with one of the natural aperient mineral waters containing sulphates, as Hunyadi Janos or Franz Josef. When there are internal piles a nightly suppository of two grains of hamamelin, continued for a couple of weeks, usually renders them no longer a source of trouble. If there is more general irritability of the rectal mucous membrane, with dilated and varicose venules, an enema composed of two drachms of liquor bismuth in two ounces of freshly prepared, thin, warm starch, administered at bedtime and retained as long as possible, will prove soothing and healing. Threadworms, if discovered, require lavements of salt and water or lime-

water. The patient should be advised to sit habitually on a hard and flat seat and to discard cushions on his chair. Locally, Lassar's paste, in which one drachm of the zinc is replaced by as much oxychloride of bismuth and without salicylic acid, applied very thinly, is appropriate in most cases. Sometimes a cold cream, having a lanolin base, in which is incorporated a little ammoniated mercury, suits even better:

Lanolini, 3v;
Ol. amygdal., 3ijss;
Aq. camphoræ, 3ijss;
Hydrarg. ammoniati, grs. vj.

Immediate temporary relief to the itching is also obtained by occasional painting with a solution of nitrate of silver, ten grains in an ounce of spiritus ætheris nitrosi. At night the disposition to scratch may be prevented by manacling the wrists with a skein of wool arranged as a clove hitch and fastened to the bedstead. In obstinate cases one or two brief exposures to the *x*-rays have been found to exercise a markedly curative effect, but their application must be directed with great caution and circumspection. Finally, for detergent purposes paper, even the finest, is inapplicable, water and a soft sponge being substituted.

CHOREA.

RANKIN in the course of an article in the *British Medical Journal* of September 12, 1908, asserts that in the treatment of the disease, rest, both mental and physical, is of special importance, and is indicated in every case, no matter how mild. In many instances the child will recover under the influence of rest alone without any medicine whatever, but many cases will get steadily worse if not treated by drugs. The child ought to be put to bed and kept there until all movements have ceased, so as to minimize the risk of cardiac complications and at the same time expedite the natural tendency to recovery. Any discoverable source of reflex irritation—such as errors of refraction, phimosis, intestinal worms, nasal troubles, dentition, etc.—should be removed or corrected. The bowels must be kept gently open by occasional doses of mild laxatives. There is no specific for the disease, but better results are got from arsenic than from any other drug. It ought to be administered from the earliest development of symptoms, in moderate doses at first, but judiciously increased and pushed up to the limit of toleration. For a child eight years old, Fowler's solution may be commenced in 3-minim doses, and gradually increased until within a week 10 minims are given three times a day. Children bear arsenic well, and can frequently stand large doses without inconvenience. Brilliant results have been claimed for heroic doses of from 15 to 25 minims, given from the onset of symptoms, three times a day after meals, in a large tumblerful of alkaline water. It is doubtful whether the ordinary and safer dosage of three minims gradually increased to 10 minims is not attended, in most instances, with perfectly satisfactory results, without the disadvantage of the need for constant medical supervision. When the stomach is intolerant of the drug, Eulenberg has advocated its administration hypodermically, but in children the emotional upset which results from the prick of the needle constitutes a serious drawback.

Cacodylate of soda is extensively used in France instead of liquor arsenicalis in the treatment of chorea. It may be given either hypodermically or in the form of a pill in much larger doses than other preparations of arsenic, but the garlic odor it imparts to the patient's breath is a strong reason against its administration. Chapnis has shown experimentally that arsenic is less toxic when combined with butter than when given in solution. A known quantity of arsenous acid, according to the dose to be administered, is taken and added to chloride of sodium in the proportion of 0.1 gramme of the sodium salt to 0.005 gramme of arsenous acid. This mixture is triturated with 10 grammes of fresh butter, and given, spread on bread, after a meal. In all cases in which arsenic is being administered over a prolonged period in large doses, a keen eye should be kept open for the occurrence

of pigmentation of the skin or of peripheral neuritis, either of which may be regarded as evidence of saturation.

In rare cases arsenic is not tolerated; under such circumstances sulphate of zinc is sometimes found a good substitute, and may be given in doses of two or three grains, gradually increased to 5 or 6 grains, to a child of eight or ten years. Antipyrin is another drug which has been recommended as a substitute for arsenic, but to be of service it must be administered in bold doses. McCall Anderson was in the habit of prescribing from 10 to 20 grains every six or eight hours for a child of eight or ten. Ergot of rye is also credited with good results, but, like antipyrin, must be administered freely—a drachm of the liquid extract may be given to a child eight years old three or four times a day. Trousseau set great store on strychnine as a curative drug in chorea, and ordered its administration in gradually increasing doses until its physiological effects were produced. In the later stages of the disease there can be no doubt about its value.

Besides arsenic, other drugs may be called for, according to the indications in each case. Thus anemia is frequently an important accompaniment and demands the administration of iron for its relief; nutrition may be much impaired, and will be benefited by the addition to the daily dietary of malt and cod-liver oil; if rheumatic symptoms are pronounced, the salicylates must be given in suitable doses; excessive restlessness demands the exhibition of the bromides; and so on. If restlessness is accompanied by a dry state of the skin, diaphoretics are often very soothing. It is under such circumstances that antimony is specially useful. When exhaustion threatens, stimulants are necessary, and should be given in quantities to suit the requirements and age of the patient.

In all severe cases something should be done to control the muscular movements until the more slowly acting drugs above referred to have time to exercise their power. The movements may be so incessant as to threaten the patient's life from exhaustion, and under these circumstances more good will be got from hydrate of chloral than from any other drug. Gairdner declared that, when pushed sufficiently far, it has an almost absolute power of suspending or controlling the muscular disorder. It may be given either alone or combined with bromide of potassium. If, for any reason, chloral is inadmissible, sulphonal or trional may be tried. Ringer recommends conium juice in doses of from one to several drachms, but its effects are not permanent, and in such large quantities it is apt to upset the child's digestion. In desperate cases it may be necessary to resort to the careful administration of morphine hypodermically, or to the inhalation of chloroform at short intervals. Cold douches or ice-bags to the spine, or the application along the course of the vertebral column of the spray of ether or of chloride of methyl, are local measures which are sometimes worthy of trial in extreme cases. Where the movements are not too violent, a warm bath or hot pack may be used with benefit. Mechanical restraint often affords the patient comfortable relief; it is best accomplished by bandaging with flannel the upper limbs to the trunk and the lower limbs to one another, subsequently fastening a blanket or sheet tightly to the sides of the cot over the child's chest and abdomen. The use of a water-bed lessens the risk of skin abrasions and bed-sores. In the later stages of the paretic variety of the disease, massage and faradization are valuable additions to medicinal treatment.

GAS-ETHER ANESTHESIA.

KAATHOVEN makes a report on the statistics of this type of anesthesia in the *Annals of Surgery* for September, 1908. He states that in this series of twenty-five hundred cases there were no serious complications, and absolutely no pneumonia or bronchitis. He has a word to say as to what should constitute a complete surgical anesthesia. It is that degree of sensory and motor depression required to enable the surgeon to complete his operation unhampered by movement or rigidity of the patient's mus-

cles, and not one whit more. From this definition it obviously follows that the degree of anesthesia varies with each operation and each individual, which fact the competent anesthetist keeps constantly in mind. The signs and symptoms of sufficient narcosis vary likewise.

In a general way it may be said that complete surgical anesthesia is indicated by a pupil reacting sluggishly to light, a regular, noiseless breathing, a good color, muscular relaxation, and absence of cutaneous reflexes. The best guide is the pupil, but unfortunately in from 85 to 90 per cent of cases it is not reliable during the whole time of narcosis. We find irregularity, inequality, absolute fixation of one or both pupils, etc., in the above percentage of cases. This sign failing, the respiration furnishes the best gauge. Close observation of the rhythm, the depth and the sound of breathing will almost invariably indicate the return of reflexes. The irritating vapor causes reflex contractions, and consequently a more noisy, more hurried, or more spasmodic breathing. Often the alteration is ushered in by one deep inspiration.

It is rarely necessary to carry the anesthesia beyond a point where slight reflex inhibition of respiration is occasioned by administration of fresh ether.

To keep the patient on the border-land between consciousness and unconsciousness requires the absolute concentration of the anesthetist. The subject's degree of narcosis varies from minute to minute. It is impossible to watch the details of the operation, or do anything but observe the changes in the patient's condition. It is much easier for the etherizer to carry the anesthesia into the deep third stage with absolutely fixed dilated pupil, shallow respiration, cyanosis, and increasing pulse-rate. He may then follow the operation for minutes at a time or otherwise amuse himself, but he does so at the expense of the individual temporarily in his care. Ether is an irritant depressing poison, and each drop needlessly administered increases the danger to the patient's life, and decreases his power of resistance.

In the hands of the author the best results have been obtained by the use of nitrous oxide as a preliminary, followed by the gauze drop method. This has the following undisputed advantages: Nitrous oxide is by all means the safest anesthetic we have, a series of 300,000 cases without a single death having been recently reported. It is not irritating, and therefore greatly enhances the patient's comfort. All the choking, gagging, and struggling so often seen where ether alone is used is eliminated. It greatly reduces the length of time required to produce surgical anesthesia, the average being from seven to eight minutes, and likewise greatly reduces the amount of ether required. This is especially true, as it is a well-known fact that it often requires as much or more ether to anesthetize a patient as it does to keep him under its influence for a considerable length of time. Its disadvantages are: nitrous oxide requires a more or less bulky apparatus, it is expensive, and in about 50 per cent of cases, principally males and children, leads to an increased secretion from the respiratory mucous membrane. This last disadvantage would be an objection indeed had we no way to prevent or at least to limit it. The most efficient preventive is the administration of a hypodermic injection of a full dose of morphine and atropine twenty minutes before the anesthesia is commenced. This has many uses. The morphine quiets the patient, and to some extent depresses the nervous system so as to limit the amount of ether required. The atropine controls mucous secretion. Preliminary sprays of adrenalin and cocaine solution are also of some use. A thorough spraying of the mucous membrane of the nose and throat furthermore eliminates the rare danger of reflex cardiac inhibition occasionally observed as the result of the first administration of ether. If mucus is secreted in excess, notwithstanding these preliminary precautions, great care is necessary. Under no circumstances should such a patient be deeply anesthetized —never to the point where practice of swabbing out the mouth and throat by gauze or other sponges is worse than useless; mucus reappears in less than two

minutes, and the friction of the sponges increases the flow. Raising the patient's shoulders, permitting the head to extend fully while placed on its side, and allowing the mucus to flow into the cavity of the cheek, thence to leak out at an angle of the mouth, is the best treatment for this condition. Occasionally repeated sprayings and another dose of atropine helps to control the ceaseless flow.

SCARLET FEVER.

As the result of observations upon three hundred and twenty-five cases of scarlet fever, McCRAE, in the *Montreal Medical Journal* for September, 1908, says he has found it an excellent working rule that every case be kept upon milk diet for three weeks from the day of onset, and in bed for the same length of time. This is quite irrespective of the severity of the case; he explains to adults in many cases the reason, and there are no complaints upon this score. It is the ward rule, and since there are no exceptions there are no objections. Milk diet, too, means milk diet; this includes only junket and whey and ice cream, when procurable; fruit juices are allowed.

The author's reason for this is that the kidney is to be relieved of every possible strain. Take the substances that are supposed to entail work upon the kidneys—urea, hippuric acid, phosphates, alloxuric bodies, and so on; these end-products of nitrogenous metabolism are considered to be the most important irritants. Meats, eggs, fruits of some kinds, and so on, contain one or the other. Water, milk, and sugar are almost the only things left to us; a milk gruel contains much more than does milk. It may perfectly well be conceded that the risk in a slight case is almost *nil*, but it is the exceptional case of nephritis one is most anxious to prevent. The hardship to the patient is but slight, and it is not exaggeration to say that the youngsters on discharge are generally very fat. We have all probably, at some time or other, echoed the remark that "we all eat too much;" for once be brave enough to put the cure into practice. If the reasons appear good, practice the method; if not, leave it alone. The end of the second week is the time at which nephritis most often makes its appearance; it seems highly reasonable that at this time, more or less critical, the patient's chances are greatly bettered if he be in bed. During convalescence, too, as the patient's time is not valuable, we can be hard-hearted enough to put him back to bed upon any alarm—a rise of temperature, or a threatening complication.

These two things—*i.e.*, rest and milk diet—are the main points in the treatment. Cold applications are usually made to the neck in anginose and glandular inflammations of any severity; local applications of antiseptics to the throat internally and washings of the nasopharynx with Dobell's solution are used when the patients are sufficiently old or sufficiently tractable. The patients are encouraged to drink water as often and in as great quantity as they will, and it is with difficulty that this is carried out to a sufficient degree to be satisfactory. Do not be misled by von Noorden's very sensible teachings with regard to water-restriction; the competent kidney fairly revels in water. With the onset of nephritic anuria we are dealing with a condition of affairs widely different.

For fever, and for the patient's comfort, sponges are in most frequent use, and packs, cold or tepid. The observation that cold bathing tends to cause albuminuria in the healthy, and to increase it in the albuminuric, need not be taken into consideration. It is not the author's custom to measure the good effects of sponges or packs by the effect upon the temperature; in fact, he regards the taking of temperature for the purpose of seeing the effect of a bath or a pack as a waste of time. Perhaps it comforts the nurse, but she has generally other distractions.

During desquamation he is not in the habit of using any inunction on the skin; probably its only efficacy is that it prevents a wide-spread diffusion of the particles of skin, which in a scarlet fever ward is of little consequence, in comparison with the

saving of time and work and the increase of cleanliness.

A procedure that he followed at first, but has given up, is the administration of a prophylactic dose of antidiphtheric serum; this is the routine practice of the Boston City Hospital in the Infectious Department. It was found that the cost was heavy in return for an advantage that was but doubtful. Of the 121 cases in which it was used, a serum rash was observed in 11, on an average on the tenth day.

THE TREATMENT OF CEREBROSPINAL MENINGITIS BY FLEXNER'S SERUM.

In the *Montreal Medical Journal* for September, 1908, FINLEY and WHITE say that in making the injection it is advisable to use a general anesthetic. The fluid is warmed and injected slowly at the rate of one cubic centimeter per half minute. Following the operation shock is sometimes present, and it is considered advisable to use camphor or strychnine hypodermically. In addition to the serum the usual measures of treatment are to be adopted, and symptomatically considerable benefit is obtained by small doses of morphine and by warm baths.

Although the temperature usually falls after the first two or three doses of serum, yet its use, if persisted in, frequently produces some unfavorable symptom. After repeated doses there is frequently a rise of temperature in six to twelve hours amounting to two or three degrees, sometimes accompanied by increase of headache, greater rigidity of the neck, and vomiting. In the fifth case a relapse came on the day following the use of the serum after it had been discontinued for four days, marked by a rise of temperature lasting for seven days, headache, and retraction of the head. This may, of course, have been a coincidence, as this event is so frequently seen in the untreated disease.

It is not easy to lay down definite rules as to dosage. Flexner advises daily injections of serum for three or four days, in doses of not more than 30 Cc., and considers it advisable, but not essential, to withdraw at least this amount of fluid before injection. The early use of serum is more likely to be attended by success. Of the cases under the author's care, one, in whom treatment was commenced on the first day, showed a remarkably rapid improvement, regaining consciousness in a few hours and the temperature falling to normal in twenty-four hours. In the other successful cases treatment was begun on or before the third day, whilst in the only fatal case the injection was given on the fifth day.

A single injection, according to some of the reported cases, seems to have been sufficient to control the disease, and in view of the toxic manifestations which appeared after repeated injections in some of their cases the authors believe it is wise not to use the serum more frequently than necessary.

Besides the indications derived from temperature and pulse, daily bacteriological examinations are most helpful, and the presence of bacteria in the fluid would certainly appear to be an indication for the continuance of treatment.

When mild symptoms persist, such as slight elevation of temperature, retraction of the head, or Kernig's sign, they consider it safer to perform a simple puncture to relieve pressure rather than to continue the use of the serum with the risk of producing toxic symptoms.

THE TREATMENT OF DISEASES OF WOMEN.

MONTGOMERY in the *Annals of Gynecology and Pediatry* for September, 1908, in discussing this topic says that when the uterus is heavy from subinvolution after a recent labor, or from an interruption of gestation, its return to the normal may be greatly facilitated by the employment of mechanical support. The ligaments may be capable of maintaining the normal organ in position and only yield to the increased weight. Where the patient's situation and circumstances are such that she can be subjected to frequent observation, the re-

duction in size can be greatly expedited by painting the surface with tincture of iodine and the employment of medicated tampons.

In addition to maintaining the uterus at a higher level, and thus improving its circulation, the tampons, when medicated with glycerin, have a depleting effect on the uterine vessels. The addition of some antiseptic will prevent the tampon from becoming foul, and thus promote its usefulness by permitting it to be retained for a longer period.

In cases in which the uterus is more or less fixed, the tampon should always be preferred to the pessary. Indeed, the pessary should not be employed unless the position of the uterus can be made normal, as the instrument does not overcome displacement, but maintains the uterus in correct position. The pessary is a crutch which, in favorable cases, bridges over a period until the organs resume their normal size and tone, when it may be discarded. Where the conditions are such that function and power cannot be regained, if once used, its employment must be continued until it can be supplanted by some more effectual measure. At best it is a foreign body, the irritation of which produces certain changes that may make its further retention a menace, or add greatly to the discomfort of the wearer. The patient wearing a pessary should be cautioned about the necessity of cleanliness and the importance of avoiding the employment of the metal astringents in the douches, as they are likely to become deposited on its surface and so roughen it as to abrade the surfaces with which it comes in contact.

The pessary should not be employed where the uterus is fixed, is of doubtful efficiency with retroflexion, and in displacement of the uterus associated with prolapse of the ovaries.

In recent cases of chronic metritis, before the stage of contraction, and subsequent to acute periuterine inflammation, much good can be accomplished through the employment of pelvic massage. The treatment can be effectually supplemented by painting the vault of the vagina with iodine and the introduction of a medicated tampon. The fixed, subinvoluted uterus may thus be set free, and its size so reduced that the ligaments can maintain its normal position. Massage should not be considered in interstitial endometritis, or when there is any suspicion of suppuration of the tubes. It is of little value when the pelvic organs are fixed by old adhesions, or when the uterus has become hardened by the substitution of connective tissue for its muscular structure.

Intrauterine applications—their indication and contraindication—have long agitated the medical mind. Here truly extremes meet, for we find those, on the one hand, who condemn any applications within the uterus, and, on the contrary, others who always seem disposed to employ them. Of late years the latter are few, as the fad has been to get away from local applications as dangerous. Emmet, possibly as much as any one, was responsible for the crusade against intrauterine medication. Unless the practitioner is capable of accurately differentiating his cases and making proper selection for such treatment, the interdiction should hold. Intrauterine treatment should not be employed in the presence of periuterine inflammation.

EARLY TREATMENT WITH RADIUM OF SOME SUPERFICIAL CANCERS, ESPECIALLY EPITHELIOMAS.

In concluding an article on this topic in the *Journal of the American Medical Association* of September 12, 1908, WILLIAMS tells us:

1. The radiations from radium are uniform in quality and quantity, and thus this remedy has a great advantage over the *x*-rays in efficiency and safety.

2. The gamma-rays from radium are useful in some cases for relieving pain. They have great penetrating power. When they are used as an analgesic the beta-rays should be excluded or the patient may be burned, because the proportion of gamma-rays is so much smaller than that of the beta-rays that the exposure must be much

longer when the gamma-rays are used, to make them effective.

3. The beta-rays from radium are the useful rays in the treatment of rodent ulcers, epitheliomas, and other superficial diseases. They can be applied in the mouth and other cavities.

4. Radium should be used early, and in suitable amount and strength. The treatment is painless and leaves the least scar.

5. Radium does not produce as good results in cases in which an operation has first been done, or scraping, caustic, or other irritating treatment has been used, or the *x*-rays have been applied.

6. Improvement follows the use of radium more promptly in many cases than the use of the *x*-rays, and the total duration of treatment by radium, though sometimes long, is much shorter than with the *x*-rays. In some cases success has followed the use of radium where treatment by the *x*-rays has failed.

7. A surprisingly large proportion of external cancers, especially epitheliomas, have healed and remained healed for some years under treatment by radium, and the author's experience thus far indicates that for certain cases of external new growths it is a better remedy than those previously at our command.

8. Recurrences follow all methods of treatment, and radium is no exception, but so far as present experience goes this is unusual, and they have yielded to further treatment by radium.

9. The disadvantage of radium is its cost to the physician.

LACTIC ACID BACILLI AS A MODERN ELIXIR OF LIFE.

The constantly increasing use of lactic acid bacilli for the preparation of milk for the sick and the views of Metschnikoff that these bacilli do a useful work in the intestines leads the *British Medical Journal* of September 19, 1908, to speak of a modern elixir of life. It points out that the organisms producing lactic acid may be administered in several ways. The simplest, and doubtless the oldest, preparation is ordinary milk which has been allowed to stand until it has turned sour. In this case many other bacteria find their way into the fluid, and although the lactic acid produced may discourage their growth, it does not prevent it, and the mixture may contain harmful microbes. The same is true of buttermilk, which, as commonly made, is sour cream from which the fat has been removed, and contains from 0.3 to 0.5 per cent of lactic acid; it affords a simple means of supplying lactic acid, and the organisms producing it, with a food poor in fat, and has been highly recommended in gastrointestinal disorders. In kumiss and kephir the milk has been subjected to the alcoholic as well as to the lactic fermentation.

A better way to prepare acidified milk is to sow the bacilli in the sterilized fluid and thus avoid the risk of contamination. The bacillus most commonly used is that derived from the Bulgarian sour milk, yahourt, and has a stronger fermentative action than other strains. The bacilli are sold under various names as powder, or in small cakes, or in a fluid preparation. The acidified milk, sometimes known by the infelicitously chosen name of "lactated milk," is prepared by sterilizing fresh milk, allowing it to cool to body heat, adding the culture, and keeping at the same temperature for seven hours. It has now become sour, and a loose clot has formed. The vessel is placed on ice for twelve hours, and the milk is then ready for use, the clot having become partly dissolved. This product differs from that obtained by curdling milk with rennet, or precipitating the caseinogen by adding acid, because it contains casein in a semidigested form as well as the organized lactic acid ferment, which will continue its activity in the intestine, for it has been shown that the bacilli may survive the passage through the stomach. Milk so prepared contains about 0.7 per cent of lactic acid; it is sweetened to taste, and taken with meals in quantities of a pint or more a day. In those intestinal disorders in which a milk poor in fat is required, it

is better to prepare buttermilk specially than to use the ordinary form, for this, as we have mentioned, may contain harmful bacteria. Cultures of lactic acid bacilli may for this purpose be added to sterilized milk which has been skimmed or centrifugalized to remove fat. The food value may be raised by adding flour and sugar. The observation that the urine of children fed on such milk does not contain an excess of ammonia shows that the danger of acidosis is negligible.

Some observers, arguing that the action of the bacilli is due to the lactic acid they form, have given lactic acid alone. Hayem and Lesage, for instance, have given children as much as 15 to 20 grammes daily without harm. Similarly, if any of the prepared milks are sterilized after the lactic fermentation has taken place, the effect of the lactic acid is obtained without that of the living bacilli. But this method is open to the objection that the acid may be absorbed before it reaches the large intestine, whereas that formed in the intestine by the bacilli will be in the most favorable position to produce a maximum effect.

All the acidified milks have the disadvantage that they do not keep well, and that their taste, though tolerated or even enjoyed by many, is disagreeable to others. For these reasons the bacilli are now often administered in a fluid culture. Such a bouillon is sold ready for use; or it may be prepared fresh by adding the microorganisms to a sterilized solution containing half an ounce of malt extract to the pint, and incubating for ten hours. A wineglass of this is taken two or three times a day an hour after meals. The ferment may also be prescribed in the form of a powder. When the cultures themselves are used, a diet containing plenty of sugar, upon which the bacillus is to work, should be ordered. Jams, sweets, and beetroot are convenient foods. The microorganism is capable of forming lactic acid from several of the sugars, and if there be a good supply in the intestine, will continue to grow there for a long time without the ingestion of further cultures.

The treatment has been applied in many pathological conditions of the alimentary tract associated with excess of putrefaction, and appears to be harmless, although there may be some symptoms of indigestion during the first few days. Good results are reported in cases of chronic diarrhea in adults, catarrhal diarrhea in children, in constipation, and chronic gastritis; also in many other diseases attributed to autointoxication from the intestine, among which we may mention urticaria and chronic arthritis.

In conclusion, it may be said that the bacillus acidi lactici has been long enough on probation to be awarded a definite place in the therapeutics of intestinal disorders. The conception of fighting harmful microbes with other microbes opens up great possibilities, and is in accordance with much that we know of the methods of nature. Of its use in health it is more difficult to speak, but it is reasonable to suppose that the diminution of intestinal putrefaction will be beneficial. A daily saline purgative securing a regular discharge of the decomposing matter has long been a popular prescription to secure length of life. The lactic acid bacillus, by inhibiting the occurrence of decomposition in the intestine, is still more radical in its action. The future must decide whether this or any other agency will enable us to prolong our days, without labor and sorrow, beyond the allotted three score years and ten.

THE TREATMENT OF MALARIA.

In the *Journal of the Royal Army Medical Corps* for September, 1908, HARDING writes on this topic. He says that in the course of his search for something better than the older methods he picked up Koch's treatment of the subject and since then all his cases have been treated according to the following plan, with only very slight modifications in detail: On admission, unless there is an obvious reason to the contrary, all cases suspected to be malarial are given 5 grains of calomel, to be followed six or eight hours later by a small

dose of a saline. At the same time a blood-film is taken, and if necessary examined at once, or ordinarily within the next six hours. Should a parasite be found, he immediately orders the medical warrant officer in charge of the case to give the patient 15 grains of sulphate of quinine, dissolved with a slight excess of sulphuric acid in 1 ounce of water, by the mouth irrespective of the temperature, but with the proviso that if vomited it is to be repeated until retained (as far as the author recollects it has never been necessary to do this more than twice). Should there be any doubt as to the nature of the parasites or the number of broods present, a second film is taken at the same time, before the quinine has had time to be absorbed, while should the film fail to show the parasite and yet be at all suggestive of malaria, as from the presence of pigment granules, large mononuclear increase, or swollen and mauve-colored erythrocytes, another film is taken, but the rule "no parasite, no quinine," is strictly observed. The following morning the same dose of quinine is given again irrespective of the temperature, and a film is generally taken to see whether the parasite has vanished; if not, a film is taken every morning until it has. The dose is repeated on five further consecutive mornings, and the patient is then fit for discharge as a rule. If only small rings are found, films are taken after a lapse of a week from the first discovery of the parasite until crescents are found, and if not found after a week's daily search the case is recorded as "parasite found, but not differentiated," as it is the opinion of the author that it is impossible to be absolutely certain as to the nature of a small ring.

On discharge the patient is given a paper telling him on what days he is to attend for further doses, and a duplicate of this is kept by the nursing sister, assistant surgeon, or hospital assistant whose duty it is to give them, and who reports any failure to attend to the physician, each dose being shown by ticking off the date, so that when treatment is completed a record exists of the actual number and date of those taken. When handing him the paper the writer personally warns the patient that in the interests of his comrades no less than of himself he should come on the appointed days, explaining the reason for this, and in general he gives but little trouble in this respect, while if he fails to come he sends him a message or note to the effect that if he does not come he shall have to send for him officially, a hint which is invariably quite sufficient. He is not struck off any duty to allow him to do this, the only concession being that he can come at any hour of the day most convenient to himself.

The dates for further doses are calculated by taking the tenth and two subsequent days from the first dose, and every tenth day after them for three months. For instance, a man in whom the parasite was found on May 1 would receive doses on May 1, 2, 3, 4, 5, 6, 7, 11, 12, 13, 21, 22, 23, and 31; June 1, 2, 10, 11, 12, 20, 21, 22, and 30; July 1, 2, 10, 11, 12, 20, 21, 22, 30, and 31—*i.e.*, not fewer than thirty doses. In cases of malignant tertian he takes films from time to time during treatment so as to see when crescents have disappeared, and on completion of it he always sees the patient himself, and again some months later, to find out how he has been, and to take films from him. At first, in the attempt to be wiser than his master, and acting on the supposed lesser resistance to quinine of the benign than the malignant tertian parasite, he only treated cases of the former for six weeks, from which he noted that, as was the experience of Koch, treatment for a month or six weeks was not invariably sufficient to prevent relapse even in the case of the—supposedly—less resistant benign tertian parasite, whereas treatment for three months certainly was, as it can hardly be doubted that all the cases of malignant tertian were cured, with the possible exception of one, and the author thinks in all probability he was.

Is it, then, too much to say that having regard to the enormous importance of

malaria, alike from the point of view of the sanitarian and the economist, this method of treatment of Koch's is the most marked therapeutic advance of recent years, one only to be compared with the discovery of diphtheria antitoxin, and that such a thing as a relapse from malarial fever should for the future be unknown? It must be added, however, that unless the diagnosis is made by the microscope failure and disappointment are bound to ensue, for to cases of liver abscess, enteric fever, septicemia, pneumonia, and syphilis, all of which the writer has known treated as malaria, not to mention the various undifferentiated Indian fevers, quinine is more likely to prove harmful than beneficial.

THE SPECIFIC TREATMENT OF TYPHOID FEVER.

In closing an article on this subject in the *American Journal of the Medical Sciences* for September, 1908, VAUGHAN states that, so far as he can see to-day, it is not probable that we will ever get an antitoxin for the treatment of typhoid fever comparable with that which we have for diphtheria, but that the residue may be of service, especially in preventing relapses, and if we can find some method of early diagnosis it may prove of value in aborting the disease.

THE OPHTHALMO-REACTION AND SCARIFICATION TEST.

HAMMERSCHMIDT (*Med. Klinik.*, June 7, 1908) advises that both Calmette's reaction and Pirquet's test of inoculation by scarification of the skin should be used coincidentally, in order that one may neutralize the mistakes of the other. He has tried this double test in 500 cases, the great majority of which were healthy people. For Calmette's reaction one drop of not more than 1 per cent old tuberculin, dissolved in 0.5-per-cent phenol solution, was instilled into one eye, and for control a drop of 0.5-per-cent phenol solution into the other. For Pirquet's test the arm, after being rubbed with 60-per-cent alcohol, was touched with a drop of a 20-per-cent solution of old tuberculin, and then on the same place a cross was scratched with a new, boiled steel pen. A second scratch was made in another part for control. Pirquet's test was positive in 140 cases (28 per cent), and of these 140 cases Calmette's reaction was positive in 97 (19.4 per cent). Beyond a slight itching soon after the scarification, and while the pustule was developing, Pirquet's test produced no local or general disturbance. In the ophthalmo-reaction there was no pain on instillation, and never any considerable inflammation of the bulbar conjunctiva—at the most there was a slight redness of that part covered by the lower lid. Subjective disturbances were observed five times, and consisted of slight pricking and burning. Only once were cold bandages required for some hours; in this case Pirquet's reaction was very weak. The ophthalmic changes appeared twelve to fourteen hours after instillation; the Pirquet result in twenty to twenty-fours, or even later. A late pustule, as described by Stadelmann, occurred in only five or six cases. When Calmette's test was positive Pirquet's test was also always positive, but the reverse was often not the case.

Although tuberculin was in many cases injected subcutaneously after the tests for therapeutic purposes, in no case did the eye become again inflamed. Reaction always occurred in cases in which it was to be expected, and frequently in cases in which tuberculosis was suspected. In strong people the reaction was quicker than in weak, but in the latter the duration was greater. In by far the greater number of cases the pustule appeared directly after or coincidentally with the ophthalmo-reaction. The statistics so far published show that Calmette's test is plus in from 78 to 99.3 per cent. Petruschky's report shows that Pirquet's test is plus in all cases except those of advanced and of manifestly healed tuberculosis. That the 28 per cent or 19.4 per cent giving a positive reaction does not correspond to the percentage of people with tuberculosis lesions (92 to 96

per cent) is explained by the fact that the reaction is the sign of active, not healed, disease. In 13 cases in which Calmette's test was positive and Pirquet's negative at first, Pirquet's test was repeated several times before a reaction followed—in two cases four times. In 7 of these 13 cases the after clinical course gave evidence of tuberculosis. The author ascribes the peculiarities possibly to a difference in capacity of individuals to react to tuberculin, possibly to an alteration in the capacity of the same individual at different times. The technique could hardly be to blame, since this was the same in all cases. When tuberculin was also injected subcutaneously, the reaction was not weakened; Pirquet's test was in three cases marked, while Calmette's was unaltered. Hammerschmidt does not agree that a subcutaneous injection always shows reaction after inoculation by scarification. In one case repeated inoculations were tried as a therapeutic measure. From fourteen inoculations a reaction was obtained eleven times. The patient felt improvement, gained one kilogramme in weight in fourteen days, and the amount of hemoglobin rose from 72 to 83 per cent, a result which is an encouragement to further trials of the treatment.

The author concludes (1) that a negative result speaks with great probability against tuberculosis; (2) that a positive result speaks with still greater probability for tuberculosis. He thinks that the combined Calmette and Pirquet tests may completely and fully replace the diagnostic injections. —*British Medical Journal,* Sept. 19, 1908.

A DIET WITHOUT SALT.

H. Strauss (*Zeit. für Phys. und Diat. Therap.,* April, 1908) discusses the best method of reducing the amount of salt in the diet. The matter is one of considerable practical importance now that a salt-free diet is recommended in certain cases of nephritis, of heart disease, in diabetes insipidus, and as an aid in carrying out a long course of bromide treatment in cases of epilepsy. For the construction of such a diet a knowledge is needed of the amount of salt contained in the ordinary articles of food, and especially in such foods as ordinarily prepared. A list of foods, cooked and uncooked, with the percentage of salt, is given in his article. Milk contains from 0.15 to 0.18 per cent of salt, unsalted butter 0.02 per cent, salted butter 1 per cent, cheese usually from 1.5 to 2.5 per cent, eggs 0.14 per cent, white of egg 0.19 per cent, yolk of egg 0.02 per cent, caviare from 6 to 7 per cent, meat 0.1 per cent, corn and legumes (except lentils) 0.01 to 0.1 per cent, vegetables, salads, etc., 0.1 per cent, but spinach and celery contain more salt, fruit usually less than 0.06 per cent.

The other list shows the importance of methods of cooking. Thus poached eggs contain 0.5 per cent of salt, buttered eggs and omelets from 2.4 to 2.7 per cent, roast beef from 1.9 to 2.8 per cent, beefsteak 3 per cent, white bread from 0.48 to 0.7 per cent, brown bread 0.75 per cent, cooked cauliflower and mashed potatoes 0.5 to 0.9 per cent, asparagus 2.7 to 3.5 per cent.

In the choice of a diet those foods as far as possible are to be avoided which need, in order to be palatable, to be cooked with much salt. This will mean especially a limitation in meat and meat broths and will involve less hardship, as it is usually demanded on other grounds. The deficiency in meat is to be made up by giving proteids in the form of foods, cheese, yolk of egg given with sugar in omelets, souffles, creams, etc., and eggs in egg sauce; poached eggs and buttered eggs can be prepared without salt and with sugar. Bread made without salt, puddings made of flour, and pastry, in suitable cases fruit in soups, sauces, lemonade, or fruit cooked with sugar, will together supply the necessary amount of carbohydrates. The bread is of great importance, because where the amount of meat is limited large quantities of bread will be taken. Though the unsalted bread has a sweetish taste, it is not unpleasant with unsalted butter or marmalade. Vegetables should be given, because they introduce variety into the diet

and they may be made vehicles for flour, and especially fat; they may be cooked in water containing a small quantity of salt, and then washed before being eaten.

The author does not recommend the salt-free diet for all cases of nephritis, but only in those in which there is dropsy or a tendency to dropsy; the tendency to dropsy can be estimated by means of a test diet, of which the essential feature is that it should be known how much salt the urine of a healthy man on such a diet should contain. Where there is no tendency to dropsy the amount of salt taken should not be reduced unless, as often happens, it is very much in excess of the amount needed by the organism, and even then it is not justifiable to reduce it to such an extent as to make food less palatable. In cases of heart disease a moderate limitation of the amount of salt is generally enough, and a rigid treatment is only needed in cases in which there is much degeneration of the kidney parenchyma as a result of venous stasis.—*British Medical Journal*, Sept. 19, 1908.

ADRENALIN IN INFECTIVE DISEASES.

HODDICK (*Centralbl. f. Chir.*, No. 41) directs attention to the use of adrenalin in acute infective diseases, and to the excellent results obtained by Heidenhain in the course of the past three years from injections of this extract added to saline solution, in cases of septic peritonitis marked by serious collapse and low blood-pressure. The failure of copious injections of simple saline solution in cases of this kind, and the views expressed by Heineke and others that the reduced tension in acute peritonitis is the result of paralysis of the vasomotor center in the medulla oblongata, and not of primary cardiac failure, led Heidenhain to make trial of adrenalin. From 6 to 8 drops of a solution (1 in 1000) of the adrenalin having been added to about a pint and a half of physiological saline solution, the mixture in the cases selected for this treatment was injected into the median basilic vein. It has been found advisable in all cases of laparotomy, except those in which the patient is already intensely collapsed, to inject the solution after and not before the operation.

The results of these postoperative injections have, Hoddick states, been found striking in regard to the prevention, or at least to the decided relief, of the extreme depression with cyanosis and low pulse so often observed after laparotomy for acute infective peritonitis. A table is given which shows that while in Heidenhain's clinic, in 1901, and the three following years, the relation of recoveries to deaths from epityphlitic peritonitis was 6 to 14, during the past two years, and since the first use of adrenalin injections, 16 patients out of 19 recovered.—*British Medical Journal*, Sept. 19, 1908.

THE HYPODERMIC USE OF QUININE AND UREA HYDROCHLORIDE.

S. SOLIS COHEN, in the *American Journal of the Medical Sciences* for September, 1908, says that the hypodermic use of the double hydrochloride of quinine and urea has proved useful in diagnosis in two ways.

There are certain cases, evidently of acute infection, which resemble malarial fevers in the character of periodicity of the paroxysms, but in which malarial organisms cannot be found in the blood. There are certain other cases in which, despite the aberrant nature of the paroxysms, there is reason to suspect a malarial origin or complication, and in which nevertheless malarial hemamebæ have not been discovered. In nearly every instance of either of these groups the presence or absence of malarial infection can be predicated upon the patient's reaction to a single injection of the urea and quinine salt. The prolonged freedom period having been found to occur invariably in every case in which the organisms had been demonstrated, it is reasonable to assume that its occurrence indicates the dependence of the symptoms upon undiscovered, perhaps deep-dwelling, parasites, and that its absence means the absence of malarial infection.

Thus, in the course of the earlier observations at the Philadelphia Hospital, at a time when five cases of intermittent fever of definitely proved malarial origin were under treatment, and manifesting, some the six and one-half days, and others the thirteen days, freedom period, there was a sixth patient who exhibited what appeared to be a typical temperature curve of quotidian intermittent fever, but in whose blood malarial organisms could not be demonstrated. He received a diagnostic injection of 15 grains of quinine and urea hydrochloride, which induced merely a temporary fall of temperature. Renewed questioning then elicited from the patient what had theretofore been denied, namely, a history of syphilitic infection some six months previously; and recovery promptly followed the use of mercurial inunctions.

In cases of typhoid fever, in which the temperature has tended to assume, at some period of the case, an intermittent type, but in which malarial organisms have not been found in the peripheral blood, diagnostic injections have, in some instances, been followed by the freedom period and in others have not so been followed. In these instances, and especially among soldiers of the Cuban war, observed in the months of July, August, and September, 1898, it was found that the freedom period usually occurred in patients whose marked loss of hemoglobin would in any event have raised suspicion as to malarial complication—that is to say, of double infection—malaria and typhoid. In some of those in whom the quinine treatment was not continued, because it did not seem to be clinically necessary, the malarial organisms made their appearance during convalescence, after the typhoid infection had run its course. In others the continuance of the quinine treatment presumably prevented such definite demonstration of the diagnosis. In those cases in which a single injection of the quinine and urea salt had a temporary antipyretic effect, but was not followed by a prolonged freedom period, malarial organisms did not make their appearance so long as the patients remained under observation; and it is fair to conclude that in these cases that form of infection was absent.

The other method in which the injection of the quinine and urea salt has proved useful diagnostically was suggested to the author by an old observation of Archibald Billings. In cases of doubtful diagnosis the injection of a quantity of the drug not sufficient to secure a definite freedom period will frequently cause the appearance in the peripheral blood of organisms recognizable as normal or atypical forms of the hemameba of malaria, and this has been observed so frequently and in so many diverse conditions that he is inclined to look upon its absence after, say, half a dozen injections, varying from three days to a week apart, and in doses increasing from 0.3 to 1 gramme, as virtually excluding malarial infection. A typical instance of the value of this use of the quinine and urea salt is the case of chronic malarial infection with splenomegaly and blood changes resembling those of Banti's disease, studied in conjunction with Dr. R. C. Rosenberger, and presented to the College of Physicians of Philadelphia in March, 1904. The author is of the opinion that in such cases the organism is resting in some larval form—if the expression be appropriate—probably in the spleen or bone-marrow, and that its appearance peripherally is part of a defensive, reproductive reaction to the paratoxic effect of quinine. That organisms do remain latent for long periods is well known, and the writer has elsewhere referred to a case in which they had reappeared annually for twenty years, provoking, usually, a gastric crisis. This phase of the subject, also, he hopes some competent investigator will look into.

GLYCERIN AS AN ADJUVANT TO SILVER NITRATE.

HARMAN in the *British Medical and Surgical Journal* of September 12, 1908, makes some comments on the numerous albuminoid preparations of silver that are now on the market. These had their

vogue not because it was found they have any superiority in action to the more familiar nitrate of silver, but because they cause less pain in application than does the nitrate. Pain is the one blot on the efficiency of the nitrate. He has made several experiments with a view to reducing this drawback, and now presents a formula which he has had in use for over a year in a wide hospital practice. To a ½-, 1-, or 2-per-cent solution of silver nitrate in distilled water he adds 15 per cent of pure glycerin. This has the effect of greatly raising the specific gravity of the pigment, and at the same time, by reason of the known hygroscopic powers of glycerin, increasing its penetrative action. He has used this on a very large number of patients, and has tried its action on himself and his colleagues in control with the ordinary nitrate solution. The glycerinated preparation is distinctly less painful. It is, he thinks, rather more effective. The salt does not lose in caustic action, for the fine pellicle of destroyed epithelium can be seen, but the pain is reduced by the action being spread over a longer period. The solution he showed was colored pink by the presence of a trace of rosaniline.

THE TREATMENT OF EPITHELIOMA BY ROENTGEN RAYS.

PFAHLER states in the *Journal of the American Medical Association* of November 21, 1908, that he has reached the following conclusions:

1. Early superficial epitheliomata involving the skin of the face and the back of the hands, when treated early by means of the Roentgen rays, should give good results in practically all cases. These results are brought about painlessly, with the least possible scarring and often with none, and they are probably more likely to be permanent than the results from treatment by any other method.

2. Epitheliomata associated with senile keratoses yield to the Roentgen rays rather easily, but there is more likelihood of recurrence.

3. Deep ulcerating epitheliomata with indurated fibrous bases do not yield good results under this treatment and should be excised when possible. When this is not possible the rays will often give relief of pain, lessen discharge, and prolong life.

4. Epithelioma involving the mucous membrane of the lower lip and cheek should be excised, and the excision followed by treatment of the glandular area with the Roentgen rays.

THE TREATMENT OF INFLAMMATIONS OF THE BILIARY TRACT.

BERKELEY in the *Medical Record* of November 14, 1908, asserts that there is no solid nor fluid medicament so far known which will have any perceptible effect in dissolving stones already present in the gall-bladder. The old French method of giving ether and turpentine on the supposition that they are eliminated in the bile, and will gradually wash away gall-stones, is neither warranted by experiment nor justified by clinical results.

The olive-oil treatment owes its celebrity solely to the lumps of oil-soap (sodium oleate) made by the reaction of oleic acid with the alkaline juices of the gut, and slightly simulating gall-stones. Analysis of these concretions will show to any one's satisfaction that they contain few or none of the constituents of true gall-stones.

A particularly dangerous practice is massage of the liver and of the region of the gall-bladder.

The medical treatment obtaining the most general indorsement of conservative practitioners may be considered under the heads of drugs and mineral waters, diet, and exercise.

As before stated, no drugs so far known have the least demonstrable solvent effect upon gall-stones, any more than upon stones in the kidney and urinary bladder. We may, however, select from among a large number of medicines some which have more or less effect in increasing the fluidity of the bile, and apparently stimulating its secretion.

Any of the saline purgatives will act in this way to some extent. Sodium phosphate in dilute aqueous solution before breakfast has long been approved. The alkaline mineral waters have the additional advantage that they are in extremely dilute solution and the patient in taking his medicine is compelled to ingest a large amount of water at the same time. Glycocholate and taurocholate of sodium have been experimentally and clinically proved to be direct and very valuable cholagogues. Their nauseous taste, long a serious objection, has been latterly removed by dexterous admixtures in several of the new proprietary preparations, and they may be given as required.

Inasmuch as glycocholates and taurocholates are both split in the alkaline intestinal juices into cholalic acid ($C_{24}H_{40}O_5$) and a by-product, it has been also proposed to give cholalic acid directly, and the results achieved by Berkeley in his own patients have been better than with anything similar that the author has tried.

It is claimed for all these drugs that they put into healthy condition an inflamed biliary mucosa, enabling the gall-bladder to take care of the stones it already contains, facilitating the discharge of those already actually lodged in the ducts, and preventing the formation of new stones.

All these remedies, furthermore, reduce intestinal putrefaction, move the bowels more freely, promote digestion, and by improving the patient's general condition, increase his resisting power all along the line.

Antifermentative drugs, like salol, are often helpful.

Patients will ultimately find out for themselves what laxative remedy suits them best. By some means or other it is absolutely necessary to keep the bowels open. Copious enemata are useful.

Regarding exercise and hygiene, it will of course be a matter of common sense that riding in rough vehicles over stony roads, horseback riding, and tight lacing should be forbidden. If any woman can be found who is willing to support her skirts by shoulder straps, she should by all means be advised to do so. Regarding diet for such patients the authorities differ, and differ so radically that one is soon led to suspect the truth, namely, that we do not know enough yet to lay down any rules of general applicability. Practically the author has found that to a majority of patients a mixed diet will be most suitable, and that they may be allowed within limits almost any article of food that agrees. During the existence of jaundice of course fats should be excluded.

Finally—and this is a matter of great importance—the quantity of food should be small at each feeding, and the intervals between meals short. The reason for this is simple: At every feeding the gall-bladder contracts, the papilla dilates, and bile is discharged into the gut. Frequent meals hence prevent a stagnation of bile, and, *a fortiori,* a precipitation to make stones.

Finally, the author points out that the diet and hygiene of these cases are fully as important as medicine. Almost all recurrent attacks of cholecystitis are associated with a fresh attack of indigestion.

THE ACTION AND DOSAGE OF PHENOLPHTHALEIN.

In the *Medical Record* of November 14, 1908, ELMER reports his studies to determine whether the action of phenolphthalein is directly on the mucous membrane as an irritant *per se,* or indirectly as a hydragogue. From the character of the stools, both in dogs and in man, he is inclined to believe that the action is that of a direct irritant, otherwise the stools should be more fluid.

In regard to the toxic properties of phenolphthalein, little can be found in the literature. Best reports a case of poisoning from a 15-grain dose, but is unable to find the records of any other case of poisoning. His own experiments with dogs, and the statement of Valmosy that doses up to 1 grain per kilo of body weight can be given to animals without danger, would indicate that phenolphthalein is practically without toxicity for animals. In his experience

four patients have taken 30 grains or more daily for at least two weeks, one taking from 30 to 60 grains daily for fourteen months without ill effect.

As to its fate within the body, according to Valmosy 87.17 per cent of all phenolphthalein taken by the mouth can be recovered from the stools. Allowing for the usual errors of such determinations, it would appear that practically all of the drug is excreted by the bowel unchanged. After very large doses small quantities appear in the urine.

If phenolphthalein were broken down, one would expect an increase of the aromatic sulphates in the urine; this, however, neither Valmosy nor Tunnicliffe was able to obtain. It should be borne in mind, however, that active purgation decreases the aromatic sulphates to some extent, so that these observations are not absolutely conclusive, but for practical purposes are sufficiently accurate. The statement of Suzor, that 0.3 grain will cause the drug to appear in the urine, is not confirmed by the majority of observers and was not true in any of the cases of the author. For this reason Tumminia's claim that phenolphthalein may be used as an indicator for the functioning power of the kidney is without foundation, at least in the vast majority of cases.

The conclusions of the author then in regard to the toxic properties of phenolphthalein are: It is not toxic in any dose that he has given it, and can certainly be given with safety up to twenty or thirty grains daily. It is not broken down within the body so far as can be determined. Best's case he is inclined to regard either as an idiosyncrasy, such as at times gives rise to statements of toxicity in regard to almost all drugs, or else the symptoms described were due to something else besides the phenolphthalein.

The more recent writers, as Tumminia, state that the dose of phenolphthalein varies greatly with different patients. To a certain extent this is true, but in 90 per cent of patients the variation is not greater than with most drugs. A brief summary of one hundred and sixteen cases of various diseases, combined with constipation, and treated with phenolphthalein at the St. Louis University Dispensary and in private practice, will best illustrate this uniformity.

In one hundred and twelve cases the dose varied from one to ten grains daily, the average being 3½ grains. The above cases included the following conditions:

Chronic constipation without symptoms other than those referable to this condition, eighteen cases; chronic constipation, accompanied by hemorrhoids, ten cases. Contrary to the experience of Buckley, the hemorrhoids were not aggravated by phenolphthalein.

Catarrhal jaundice, two cases, in both of which were alcoholic stools. In neither case was more phenolphthalein required than in cases in which the stools showed abundance of bile, although both patients were quite constipated. The remaining cases included: Influenza, eleven cases; acute and chronic rheumatism, seventeen cases; neurasthenia, seven cases; hypochlorhydria, ten cases; and hyperchlorhydria, thirty-five cases. Of the four cases requiring large doses, three were diagnosed spastic constipation; each patient took from thirty to forty grains for at least two weeks without satisfactory results, but without any symptoms of intoxication.

The fourth case was that of a man, sixty-eight years old, with benign stenosis of the pylorus contracting the opening so that a bead three-eighths of an inch in diameter was the largest that passed through the stomach. This patient requires from forty to sixty grains of phenolphthalein daily, and has taken such doses for eighteen months. Of other cathartics tried, all require from five to eight times the usual dose, and most of them produce disagreeable symptoms, such as cramps and tenesmus.

The author has secured better results from using phenolphthalein in powder than when compressed into tablets, or even when given in capsule. Usually he prescribes two drachms of the powder, and directs the patient to take what will lie on a dime (about three grains) before going to bed.

It is best taken by placing it on the tongue and taking a swallow of water. The powder is tasteless and odorless, and as a rule is not objectionable; the dosage is easily regulated by the patient.

Elmer therefore concludes that phenolphthalein probably belongs to the class of intestinal irritants, but its action seems to be accompanied by less discomfort than the majority of cathartics of this class.

It is non-toxic, at least in doses up to 25 or 30 grains. It is extremely stable, very little if any being broken down in passing through the body. A little is absorbed, but is excreted by the kidneys as such.

The average dose may be placed at from one to five grains, best given in the powdered form, either at night or in divided doses after meals. In cases of hyperacidity it can be advantageously combined with an antacid powder.

THE SERUM TREATMENT OF CEREBROSPINAL FEVER.

KOPLIK writes on this topic in the *Medical Record* of October 3, 1908. It is his opinion that it is rather premature and unfair in every way to draw any conclusions as to the serum until we have seen larger material and until we have tried it in an epidemic of the violent type, such as we passed through in 1904 and 1905. On the other hand, it may be said that the serum of Flexner not only makes a very favorable impression, but is certainly a factor which cannot be excluded from the therapy of cerebrospinal meningitis, no matter what our subsequent conclusions may be. It certainly does appear that with the serum as we perfect it we may have an improvement in the percentage of recoveries. It is hard to say whether taking the cases which the author has treated he will continue to have the same good fortune to save all but two cases out of thirteen. Even if the cases he has lost were below one year of age, judging from the results obtained elsewhere, we may still meet with cases which we cannot save by the serum, and it would certainly be very unreasonable to expect a continuance of such a very high percentage of recoveries as those which the author has reported.

THE ADMINISTRATION OF TUBERCULIN IN PULMONARY TUBERCULOSIS.

The London *Lancet* of October 31, 1908, contains an article by INMAN on this topic. He reaches the following conclusions:

1. Tuberculin may be given with effect by the mouth or rectum or subcutaneously. The dosage is dissimilar, but animal experiments, opsonic curves, and temperature charts show that the effects produced are the same.

2. The administration of tuberculin meets with little, if any, success so long as successive autoinoculations spontaneously occur and cannot be limited by the means at our command. Absolute rest is the most efficient means for limiting autoinoculation.

3. The administration of tuberculin may be adequately controlled in a large percentage of cases of pulmonary tuberculosis by a careful daily observation of the temperature and clinical condition of the patient.

4. In cases of difficulty valuable information may often be obtained from an examination of the opsonic index.

5. The German method of the routine administration of tuberculin by gradually increasing doses at stated intervals is not to be recommended. It is only satisfactory in a very limited class of cases, and even then may not lead to the best results.

6. Tuberculin is a dangerous drug and its administration requires considerable experience. It is capable, when given improperly, of producing disastrous and even fatal results.

PNEUMONIA.

DEEKS in the *Medical Record* of October 3, 1908, tells us, in regard to the treatment of pneumonia on the Isthmus of Panama, that important facts have been noticed. It is not the object of the writer of this paper to discuss the smaller though important methods of treatment, such as rest, fresh air, and general hygiene, but to point out

particularly the misuse of an important drug which modern medicine not only sanctions but teaches to be of special value in the treatment of pneumonia. The reference is to quinine. In a district where malarial infection is almost universal it is but natural to assume that quinine here would be a *sine qua non* in the therapeutic armament for the management of pneumonia patients. The direct opposite has been found to be the case. Of the author's cases only in 16 bloods of the 574 cases examined were the malarial plasmodia found on the day of admission to the hospital, and since special attention has been directed to this point the general principle may be formulated that leucocytosis destroys or is antagonistic to the pathological activity of the malarial parasite. When this was noted the use of quinine in the treatment of pneumonia cases was discontinued, and it was used only on the day of admission, before the diagnosis was made. On analyzing the results the following percentage of comparative mortalities was obtained: Total mortality in the 574 cases, 37 per cent; mortality of 338 cases treated with quinine, 41.4 per cent; mortality of 236 cases treated without quinine, 30.5 per cent—a clear gain of almost 11 per cent.

ON THE TREATMENT OF TACHYCARDIA.

GOLDSCHEIDER in *Folia Therapeutica* for October, 1908, calls attention to the fact that certain states of the heart depending on myocarditis, atheroma of the aorta, syphilis, or even granular kidney are very often held to be of nervous origin, because the increased pulse-rate, the feeling of anxiety, pain, and lack of objective heart symptoms lead to that supposition. A careful examination of the heart, however, including examination by the *x*-rays, will guard against such an error. A positive finding of a pathological condition of the heart would not, on the other hand, exclude the possibility of an accelerated heart being of a nervous character. All nervous, physical, and reflex (*e.g.*, gastrointestinal and genital) agencies may be effective in either a sound or unsound condition of the heart muscle. Marked palpitation during active exercise is mostly a symptom of cardiac weakness. Many heart patients have quite an ordinary pulse so long as they remain quiet, but on slight locomotion or by merely assuming the erect attitude they get increased pulse-beat and finally cardiac arrhythmia. But a not inconsiderable action of the heart may take place in nervous conditions also during exercise, mostly when such are combined with a certain sense of fatigue or some psychical excitement on the part of the patient. The treatment of nervous and myogenic tachycardia varies widely.

In the nervous forms real heart tonics, such as digitalis and strophanthus, are usually of little good; yet, unfortunately, preparations of digitalis are frequently prescribed to slow the pulse in tachycardia, the only result being the acquisition of dyspepsia.

The following measures are recommended for adoption as accessory to the treatment of the real underlying cause of tachycardia:

1. *Rest in the recumbent position.* It should be here noted that some neurasthenics cannot endure protracted rest, since they suffer nervous attacks, and on this account must be allowed occasional exercise.

2. *Application of cold to the heart.* This may be carried out by means of an ice-bag, or bottle filled with cold water, or by the use of Gaertner's coil, the latter being particularly recommended as it adapts itself so well to the chest wall, exercises no inconvenient pressure, and by it the cold may be uniformly applied. The application of cold to the cervical region (nape of the neck) may be tried.

3. *Mental composure* is of great importance not only in nervous but in every form of palpitation, as a close relation exists between mental conditions and the action of the heart; and it is in these conditions that sedatives are useful.

4. *Sedatives.* Preparations of the bromides, such as sodium bromide or a mixture of sodium, potassium, and ammonium

bromide, or the well-known effervescing bromide salt, or bromide tablets. Veronal in doses of 0.1 gramme two or three times daily sometimes exerts a soothing influence on general excitement, especially on that of the heart. Huchard recommends quinine hydrobromide. Valerian preparations sometimes give excellent results. Hydrocyanic acid should also be tried, the simplest form of which is cherry-laurel water (30 to 40 drops a day). The local application of menthol in the form of a stick or as an ointment and inhalations of menthol dissolved in hot water are likewise useful in many cases.

5. Should the accelerated nervous pulse be weak as well, we may draw on the preparations of caffeine as well as tincture of strophanthus. The extractum cacti grandiflori fluidum may be tried, 10 to 20 or 30 drops three times a day.

In violent action of the heart, which frightens the patient and causes great alarm, small doses of morphine, codeine, or dionin may be necessary. At times the application of a pressure bandage acts beneficially.

6. Gentle massage of the cardiac region, abdomen, and back, and the employment of electricity in its various forms (galvanism, alternating-current baths, and the high-frequency current), are within the sphere of treatment to be adopted in all cases of nervous tachycardia.

7. Lukewarm baths, 92° F. to 95° F., with or without the addition of aromatic vegetable extracts.

As already remarked, the primary disease (neurasthenia, anemia, the uric acid diathesis) must be treated.

Where stomach, intestinal, or sexual reflexes are the cause of tachycardia, they should be treated therapeutically. Fermentative changes or excessive gastric acidity should be treated with alkalies, or the stomach should be washed out and the diet carefully watched. An article which has often proved of the greatest service to the writer in conditions such as these and in reflex cardiac disturbance is camphora monobromata, 0.1 to 0.2 gramme a day.

The occurrence of tapeworms in the intestinal canal may produce reflex tachycardia, and the taking of rich and heavy suppers may cause nocturnal palpitation. Moreover, the connection of gastric and intestinal affection with disturbance of cardiac innervation is not always merely reflex, the toxic effects of intestinal fermentation with pushing up of the diaphragm and consecutive mechanical influence on the heart being of greater importance.

8. The intimate relation between tachycardia and sexual conditions is recognized, and among those coming under chief consideration are the period of puberty, especially in the female sex, the climacteric, dysmenorrhea, masturbation, and diseases of the organs of generation, such as prostatitis, and gynecological affections.

SOME MISTAKES WHICH MAY PREVENT THE BEST RESULTS OF THE URIC-ACID-FREE DIET.

HAIG, of "uric-acid" fame, in the *Medical Record* of October 3, 1908, says that to get free from disease which is occasioned in whole or in part by uric acid, it is not merely necessary to cease swallowing uric acid or xanthin, but some means must also be found for getting rid of the stores or accumulations of these substances already in the body. This is necessary in troubles of the gout or rheumatism class, because there can be no peace or comfort in the tissues while the joints, fibrous tissues, muscles, and fasciæ contain more or less considerable quantities. And for the same reason it is always necessary to guard carefully against any accumulation of such stores by retention.

Then even getting these deposits into solution may increase the local irritation at first, till the accumulation has been completely dissolved and removed, for during this resolution the urate is for a time in the same condition (*i.e.*, colloid urate in suspension) as it was when causing the first irritation in the joint (acute arthritis). The deposit of biurate is a later stage of the process, and with this deposition of insoluble biurate all irritation ceases. Yet

when a solvent (alkali) begins directly or indirectly to get this urate into solution, local irritation begins once more. An alkali may act directly on the biurate, getting it into solution or colloid form (as may be seen by observing the action of alkali on uric acid under the microscope), or indirectly, by sweeping urate out of the body by the kidneys, thus rendering the body fluids poor in urate, so that they are no longer saturated with it; and these fluids will then themselves (as shown by the late Sir William Roberts) begin to take up urates from the deposits. For this reason the blood of those who live on the uric-acid-free diet is nearly always in a condition to take up urates from the deposits, for it is only rarely saturated with these substances. Hence the uric-acid-free diet itself may cause some increase of joint pains when it is first begun, and this increase of pain is not to be looked upon as a bad sign but as a good one.

In either case solution whether by diet or by alkali may occasion some increase of local irritation or pain, and unless its causation and the fact that it is a good sign are borne in mind, the treatment may be unnecessarily blamed and given up.

For this reason potatoes and other vegetables containing much alkali are often said to be things which the gouty must carefully avoid for fear of increasing their pain. And no doubt on ordinary diet this is quite true, for it is no use stirring up old deposits and getting them into solution, unless this is to be part of a general clearance of urates, aided by a diet which at least does not introduce fresh quantities; so that the gouty had better avoid potatoes unless they are going to do the thing thoroughly.

It is also necessary to get clear of deposits in the case of the circulation troubles (headache, epilepsy, and depression), for so long as there is plenty of urate in the body available for solution, so long will the blood be liable to be flooded with this substance and the attacks of these troubles will be more or less frequent.

It follows that the uric-acid-free diet must be modified, at least to some extent, and in the early stages of its use, according to the nature of the case with which we have to deal; whether it is one of arthritis and retention or collemia and depression, or again whether the patient is strong and well nourished with good blood, or weak, anemic, and dyspeptic; and very many of the mistakes about which the author speaks are due to neglect of these points in practice.

The object of the uric-acid-free diet is to get as free as possible from uric acid, to reduce introduction, which on ordinary diet often amounts to eight or ten grains per day, down to nothing. As a result of this we have only to deal with some ten or thirteen grains of daily formation, and so we reduce the daily turnover of uric acid from twenty-three grains to thirteen.

Now we must never forget that the ideal of uric-acid-free diets is that of the lower classes in the poor rural portions of England, Scotland, and Ireland, as it was sixty, eighty, or a hundred years ago, before the great general invasion of flesh and tea, which, especially in the last thirty years, have become so much cheaper and more widely used. This diet consisted of bread with wheat or barley meal and cakes made from these, some milk and cheese, and some vegetables. There was no fruit in winter, and only a little home-grown in summer, but some home-grown vegetables were available most of the year round. Milk and cheese were then relatively cheap in the country, as there were in those days but few facilities for drafting them off to the large towns, while in these days of easy transit town prices rule more or less in the country, and milk is no longer the cheap food for the poor which it used to be. The nourishment of this diet was got out of the bread, meal, milk, and cheese, all practically uric-acid-free, and the alkaline vegetables with manual labor kept the blood alkaline and allowed all the uric acid of formation to pass freely out of the body. These people therefore lived on the best form of uric-acid-free diet obtainable in this country, and were and remained uric-acid-free because labor and vegetables aided excretion and there was no fruit out of season to

cause retention; yet they had plenty of nourishment, which labor and a hearty appetite enabled them to take freely, and they were thus strong, hearty, and healthy.

If we bear this ideal constantly in mind we shall easily see to what extent other modifications of the uric-acid-free diet differ from it and the probable effects of these differences, for it is obvious that, even though we keep the daily turnover of uric acid at thirteen grains a day, there may still be some excess of uric acid in the body, if the whole of the thirteen grains is not excreted each day as it is formed. If on Monday, Tuesday, and Wednesday only eleven grains are excreted, then on Thursday, Friday, Saturday, or some later day six grains will be available to pass through the blood and help to produce an attack of some collemic trouble as they pass. And these same six grains may at the time of their retention have produced more or less pricking and shooting pains in the joints, fascia, or other fibrous tissues; so that it is possible even on a complete uric-acid-free diet to suffer from arthritis on the one hand or collemic trouble on the other, if the diet, though uric-acid-free, is unsuited to the climate, house, clothing, exercise, nature of soil and water, etc., of the place where the patient lives—that is to say, if any of these things, acting with a relatively unsuitable diet, are permitted to cause retention. Thus the uric-acid-free diet must vary with the season, being more alkaline in winter and less alkaline in summer—more alkaline the more sedentary the patient's life, and more laxative the harder the water.

There is but one object for all these variations, namely, to approximate to the above ideal of life and food, and like that ideal to prevent retention or render it improbable under ordinary conditions. The peasant of old times was uric-acid-free because (1) his diet was so; (2) it contained a fair quantity of potato and vegetable; (3) it contained but little fruit, and that only when in season in the place where he lived; (4) bodily labor kept his blood highly alkaline by eliminating acids in perspiration; (5) labor gave a hearty appetite, hence he could eat bulky foods freely, and was therefore strong and well nourished; (6) the bulky food prevented constipation, which is always a cause of relatively high acidity and retention in those who suffer from it. Constipation raises acidity by increasing the absorption of acids from the large intestine; hence the twofold bad effect of hard water, for urate of lime is insoluble, and the constipation, which lime also produces, aids retention by diminishing the alkalinity of the blood.

EMPYEMA.

Dick (*British Medical Journal*, Aug. 29, 1908), much discouraged by the futility of the ordinary treatments adopted for the cure of chronic empyema, employed hyperemia and hypertransudation, which were so satisfactory that he is impelled to report his case. A child between eight and nine years old contracted pneumonia; six months later it had a rib resected, as the result of which he benefited greatly. From the closure of his drainage opening there was a reaccumulation of pus, requiring a second section, with the evacuation of 10 ounces of thick pus. There followed a period of four months' imprisonment, when, because of deficient drainage, septic symptoms again developed and rib resection was again practiced, after which 20 ounces of pus was evacuated. Six months after the operation the capacity of the cavity was a little over two drachms; three months later it was practically the same. About a drachm of pus could be aspirated each morning from the bottom of the cavity; the usual breathing exercises and antiseptic irrigations had been resorted to daily during this period. This was two years from the onset of pneumonia and nine months from the final operation.

A cupping glass with a rubber exhaust was employed of such shape and size as to include the sinus and a portion of the chest wall bounding the cavity externally. While the cupping glass was in use the patient inflated a football, in the hope of securing a further local reëxpansion, or, it may be,

a localized emphysema of the portion of lung abutting on the cavity. The cavity was filled daily with the sodium citrate-chloride solution recommended by Wright (*Practitioner,* May, 1908, p. 592). The first result was an increase in the amount of discharge. After a week the citrate solution was discontinued and mercury biniodide solution (1 in 2000) was substituted, when the discharge diminished. In a few days the citrate solution was resumed, and these alternations continued for two months. At the end of six weeks from the beginning of this treatment the sinus only admitted a fine probe and was quite dry.

PYOPERICARDIUM IN CHILDREN.

Poynton (*British Medical Journal,* Aug. 15, 1908), basing his remarks on the analysis of 100 fatal cases of this affection taken from the Great Ormond Street Hospital and other records, notes that 83 per cent occurred before the fourth year of life was completed and two-thirds between the ages of one and three years, making it, in fact, almost a disease of infancy. Primary pyopericardium is excessively rare. About 60 per cent were associated with empyema, and about 40 per cent were associated with acute pleurisy. A few were associated with acute pulmonary tuberculosis. About 20 per cent of the cases ran an acute course lasting about four weeks. Fifty per cent were subacute, lasting four weeks to six months; 17 per cent were chronic, with insidious onset lasting from six months to over a year. In acute cases the symptoms were abrupt and pneumonic in type. In the subacute and chronic cases, cough, pleural pain, and wasting were prominent. In the most chronic cases only gradual failure of strength and health was recorded. The majority of the symptoms are in no sense localizing. Those which attract especial attention as unusual and not quite like those which are expected in severe pulmonary disease are extreme illness with lividity, panting respiration and excessive dyspnea, curious irregular rises of temperature accompanied by rapid and feeble action of the heart, orthopnea, and syncopal attacks. The last two are regarded by the author as the most suggestive, if in addition the pulse is strikingly rapid and excited.

When the diagnosis has been arrived at with confidence one of two events has probably occurred—either pericardial friction has been detected, or there has supervened a large pericardial effusion. In children both events are exceptional.

When a case of pneumonia or empyema first comes under observation, if the exact condition of the heart is recorded it is possible in some instances to trace out every stage of the development of the effusion. Among the most important signs are progressive muffling of the heart sounds, synchronous with enlargement of the cardiac area, together with marked percussion dulness over the pericardium and sometimes posteriorly in the interscapular region. Tubular breathing or absent breath sounds may also be noted in the interscapular region.

A rapid and extensive increase of the cardiac dulness upward toward the left clavicle.

The pear-shaped outline of a distended pericardium.

The abrupt transition from the dulness of fluid to resonant lung tissue.

A wavy and diffuse pulsation to the left of the sternum.

When there is much fluid round the heart the pulse becomes rapid, small, and sometimes very irregular and almost running in character.

As to the clinical distinction between rheumatic and pneumococcal pericarditis, the latter is at its maximum frequency under four years of age, is almost never complicated by endocarditis, or dilatation, is as a rule complicated by empyema, pneumonia, and pleurisy, exhibits a marked tendency toward pus formation, is only exceptionally complicated by joint involvements. In all these respects the rheumatic pericarditis differs.

The prognosis of suppurative pericarditis in small children is exceedingly grave. Surgical intervention offers the best chance of

success, and there are some recorded cases of recovery. Poynton holds that in infants even if the pericardium be opened the relief afforded will be comparatively slight on account of the difficulty in draining the tenacious exudation and the presence of multiple associated lesions. Paracentesis of the pericardium is, of course, required in these cases, and if there is sufficient evidence of an effusion it is well to proceed at once to open the pericardium. As to the exact site for exploration, West has recently advocated the left lower margin of the cardiac dulness—that is, in the region of the impulse.

In uncomplicated cases this is doubtless the wise procedure. In accordance with the conditions present, however, it may be wise to introduce the needle into the fourth or fifth intercostal space close to the sternum or in the left costoxiphoid angle, pressing it inward and upward behind the lower end of the sternum. Inflammatory changes in the anterior mediastinum and great thickening of the pericardium itself make it sometimes difficult to tell when the pericardial cavity has been opened.

RADICAL OPERATION FOR UMBILICAL HERNIA.

MARTIN (*Deutsche Zeitschrift für Chirurgie,* Bd. 94, Hefte 3 and 4) reviews the development of the various forms of operation for umbilical hernia and describes the technique which he has devised upon the basis of the Mayo operation. This consists in removing an oval portion of skin transversely, dividing the fascia and both layers of the sheath of the rectus transversely, opening the sac by longitudinal incision, replacing the contents, and removing the sac.

The peritoneum, transversalis fascia, posterior sheath of rectus, and rectus muscle are sutured longitudinally, and the anterior sheath of the rectus, the fascia, and the skin are sutured transversely. The fascia is overlapped after the method of Mayo. The deeper stitches are of catgut and silk, and those of the fascia are alternating ones of iodized catgut and silk. The skin is closed with a running stitch. By this method there are two lines of suture at right angles to each other and touching at only one point. A very resistant belly wall is produced. The patient is put to bed with the knees flexed, and compression is made over the bandage by means of a sand-bag.

The author has operated upon three corpulent women with hernias varying in size from that of a goose-egg to a man's fist, and upon two children and a man with small hernias. In none of these has there been a recurrence.

STRANGULATION OF THE INTESTINE BY MEANS OF A THROUGH-AND-THROUGH SUTURE.

FISCHER (*Deutsche Zeitschrift für Chirurgie,* Bd. 94, Hefte 1 and 2) reports three cases of strangulation of the intestine by a through-and-through supporting stitch used in closing an abdominal incision. The first patient was a man sixty-four years of age, who had been operated upon for ileus with numerous adhesions. In spite of the operation the symptoms persisted and death followed. At the autopsy a loop of the ileum was found incarcerated between the abdominal wall and a wide-reaching supporting suture which had been placed through the entire abdominal wall. There was no sign of peritonitis.

The second case was that of a woman fifty-three years old, in whom extensive resection of the intestine was done on account of gangrene. On autopsy there was no sign of peritonitis, but a loop of jejunum was caught behind a supporting suture; the part of the intestine above the incarceration was much distended with gas.

The third case was that of a strong man aged twenty-three years, who had been kicked in the abdomen by a horse. There was no outward injury, but the patient exhibited violent symptoms. On operation there were found rupture of the jejunum and laceration of the omentum and mesentery. The abdominal incision could be closed only with difficulty, and three silver reënforcing stitches were used. The abdo-

men was opened in both groins, tamponaded, and drained. On autopsy the abdomen was greatly distended, plastic peritonitis was wide-spread, and a loop of the upper part of the ileum was caught in the lower reënforcing stitch and already gangrenous.

In searching the literature and making inquiry of Professor Wilms, of Basel, the author of a book on "Ileus," Fischer has not been able to learn of the report of any similar case. He thinks, however, that it must be much more frequent than this would indicate. The reason for this apparent rarity is chiefly that in making an autopsy the operation stitches are removed and the incarcerated loop allowed to escape before it is seen *in situ*.

The author believes this condition is a frequent cause of postoperative peritonitis as well as sepsis due to interference with the peristaltic movements of the intestine. Surgeons should suture the abdominal wall in such a way as to avoid this accident.

ARTIFICIAL BLOODLESSNESS OF THE LOWER PART OF THE BODY.

RIMANN (*Deutsche Zeitschrift für Chirurgie,* Bd. 94, Hefte 1 and 2) of Trendelenburg's clinic reports upon the production of bloodlessness of the lower part of the body after the method of Momburg, designed for use in operations upon the upper part of the thigh and the pelvis, and accomplished by placing around the waist between the crest of the ilium and the border of the ribs a thick rubber tube in several turns to the full extent of its elasticity so that the pulsation of the femoral artery can no longer be felt. Trendelenburg practiced this method upon a patient, making with Momburg's case the second one upon which it has been used, in both instances with good results and without injury. The patient upon which this report is based was a man of twenty-eight, who had suffered almost complete avulsion of the right lower limb at the knee-joint. Amputation was performed above the knee, but on account of subsequent suppuration exarticulation at the hip-joint was decided upon. A rubber tube 2 meters long and about 2 centimeters in diameter was placed around the waist in three turns as tightly as possible and knotted at the side. On operating there was no spurting from arteries, though there was slight dropping from the vessels, which rendered it easy to find them for ligation; there was very little ligaturing to be done after removal of the tube. The tube had been left on for twenty-five minutes; in Momburg's case for forty-three minutes.

The individuals on which this method had been used were slender; whether it can be used with safety upon corpulent and muscular persons must be determined by further experience.

THE TREATMENT OF TETANUS, ESPECIALLY BY THE USE OF LIPOID SUBSTANCES.

BOCKENHEIMER (*Archiv für klinische Chirurgie,* Bd. 86, Heft 2) reporting from the late von Bergmann's clinic, and basing his conclusions upon 25 clinical cases and experiments upon animals, says that so long as there is lacking a method of early diagnosis of tetanus infection all wounded persons must be treated prophylactically. Immediately after the injury the suspected wound should be treated antiseptically, best through washing with three-per-cent solution of hydrogen peroxide, and an application of antitoxin in solution or powder. In extensive wounds, in addition to the local application, an injection of antitoxin should be made into the muscles and large nerve trunks near the wound. This treatment is to be repeated daily during the first two weeks. In severe wounds amputation is not to be omitted. After symptoms of tetanus have appeared in cases not treated prophylactically, amputation of the affected limb must unqualifiedly be done. When other parts of the body are wounded, wide removal of the infected tissues should be practiced. Even in localized tetanus amputation should be done, because there is no means of forecasting how soon the disease may become general.

In cases treated prophylactically amputa-

tion should be done if symptoms appear before the twelfth day. The longer the incubation period the more conservative one can be in reference to amputation. After amputation daily injection of large doses of antitoxin should be made, and these kept up several days after the convulsions have ceased.

In conjunction with measures of prophylaxis above mentioned there should be applied each day to the wound a fatty ointment, preferably Peru balsam or vaselin, with or without the addition of antitoxin.

By thus carrying out prophylactic measures not only are dust, dirt, and foreign bodies removed from the wound, but also putrefactive bacteria and pus, both of which are highly objectionable because their presence increases the formation of the toxin.

When tetanus has once developed, in addition to amputation and antitoxic treatment there should be given chloral in high doses, 10 to 20 grammes daily, morphine, and repeated anesthesia. In tetanus of the lower extremities lumbar anesthesia should be produced by the usual means or the injection of magnesium sulphate solution, one cubic centimeter of a 25-per-cent solution for each 25 pounds body weight, after the method of Meltzer.

Rest of the affected part and of the whole body has a favorable influence; keeping the body cool lessens the severity of the convulsions.

HIRSCHSPRUNG'S DISEASE.

PETRIVALSKY (*Archiv für klinische Chirurgie*, Bd. 86, Heft 2) has made a careful study of a case of Hirschsprung's disease in the clinic of Kukula in Prague, in which a microscopic examination was made of every part of the intestine as well as the pyloric end of the stomach, and, in addition to this, he has studied the literature of the subject. As a result he concludes that in genuine megacolon there is no mechanical cause of stagnation, obstruction, or strangulation, but that these phenomena supervene as a result of failure of proper development of the entire gastrointestinal tract and perhaps also of the related glandular organs. The intestinal tract is about one-half shorter than normal, and its mesentery shows improper development of the blood-vessels. Also there is a hyperplasia of the connective tissue in the intestinal wall, as a result of which peristalsis is weakened and the intestinal contents are not propelled as they should be. In turn the colon becomes dilated and hypertrophied. Neither the dilatation nor the hypertrophy is congenital, but only consecutive to the histogenetic defect, although they may manifest themselves very early. A valve-like obstruction may develop at the junction of a freely movable dilated portion of the intestine with a fixed portion, but this is never the cause of megacolon.

There is a condition of dilatation whose symptoms resemble Hirschsprung's disease and which develops mostly in growing persons as a result of anomalies in the mesentery or the intestines, such as excessive length of the sigmoid, the formation of a loop at a flexure, or a narrow insertion of the mesosigmoid, and which may result in the development of a valve-like obstruction with consequent dilatation and hypertrophy. The basis of these cases is, however, quite different from that of congenital megacolon, and the histological findings are quite different.

In the treatment of megacolon purgatives are of little value. Better results are obtained by high enemata, and these must often be repeated two or three times to give results. In case of valve-like obstruction the effect of enemata is only temporary, and taken as a whole they exert but little influence. Something may be accomplished by the passage of a bougie into the flexure of the sigmoid, massage, hydrotherapy and electric stimulation, and milk diet. Sometimes it is necessary to remove the fecal accumulations digitally or with an instrument. In spite of the difficulty in nourishment and the slight results from medication, these individuals may live to the age of forty or fifty years.

In some cases operation is to be recommended. The operations are colopexy, anastomosis, colostomy, and colectomy.

POSTOPERATIVE EMBOLISM OF THE LUNGS.

RANZI (*Archiv für klinische Chirurgie,* Bd. 87, Heft 2), reporting from von Eiselberg's clinic in Vienna, states that in 6871 operations upon patients afterward confined to bed, during the last seven years, there have been 57 cases of lung complication of embolic nature, proven either by the clinical course or by autopsy. Of these 23 were fatal cases of non-infective embolism, 20 of infarction, and 14 of suppurative embolism. The majority of the cases of embolism followed laparotomy, hernia operation, or extirpation of the rectum.

The causes of lung embolism are said to be thrombotic processes in the region of the operation; affections of the heart, which weaken the circulation; injury to the heart muscle by prolonged narcosis; and the deteriorated general condition of the patient, due to the disease for which the operation was done. Over one-third of the cases of embolism were in patients who suffered from cancer. In the majority of cases the embolism occurred within the first five days after operation; in one instance it took place in thirty-nine days and in another three months after operation.

Out of 37 post-mortem sections it was found that in 18 cases the embolus had its origin at the site of operation, and in 18 other cases it originated in the lower extremity.

The most important measure in combating embolism is prophylaxis. In the preparation of the patient for operation as well as after operation the heart-action should be strengthened. This is best done with digitalis. The period of anesthesia should be shortened, and, whenever possible, during the course of the operation the anesthetic should be withdrawn.

After operation systematic breathing exercises should be carried out, the position of the patient should be frequently changed, the lower extremities should be massaged, rubbed with wet cloths, and active and passive motions should be made. In anemic persons with weak hearts the lower end of the bed should be raised; a pillow should be put under the knees to keep the limbs flexed. It is dangerous to allow a patient to get up soon after operation.

In making a study of his cases in reference to the applicability of the Trendelenburg operation of cutting into the pulmonary artery and removing the clot, the author found that this operation would have been suitable to only a very few. The only cases in which operation could succeed anatomically are those in which the embolus is in the trunk of the artery or in a main branch, and in these cases death is usually very sudden. He believes, however, that the Trendelenburg operation should be tried in suitable cases, but only when other means have failed.

KIDNEY STONE.

ZUCKERKANDL (*Archiv für klinische Chirurgie,* Bd. 87, Heft 2) states that an aseptic stone in the kidney may be allowed to remain when there is no hindrance to the secretion of urine, but that stones should be removed early from infected kidneys. The operation should be conservative, for it is especially important to preserve the parenchyma of the kidney. One has to choose between extirpation of the kidney or removal of the stone by nephrotomy or pyelotomy. Nephrectomy is to be performed in those cases in which the function of the affected kidney has been destroyed while that of the other kidney is preserved. If the function of the affected kidney is in part preserved the kidney must be saved.

In general nephrotomy for the removal of stone is not conservative and is fraught with danger. Infarct formation is apt to take place in the kidney far beyond the line of incision. The location and direction of the incision are of no importance so far as the prevention of infarction is concerned. Nephrotomy is the most serious operation upon the kidney. Shock is considerable, and the author has lost two out of eight cases of infected kidney upon which nephrotomy was done for stone. Bleeding is always severe, and the author has seen a patient die of hemorrhage on the day of the operation;

in one case he had to extirpate the kidney eight days after operation on account of bleeding.

The author has performed pyelotomy 18 times in 41 stone operations upon the kidney. The operation gives quite excellent results in well-selected cases with careful technique and good attention to the wound. It is doubtless a less serious operation than nephrotomy, is in reality conservative, and has none of the hidden dangers always threatened by nephrotomy. Of the cases upon which Zuckerkandl has performed pyelotomy one died of septicemia; all the others recovered without fistula. In one case the operation was done on account of recurrence one year after the first operation, and in spite of the difficulty of the operation it succeeded well.

ACUTE NON-SUPPURATIVE THYROIDITIS.

DUNGER (*Münchener medicinische Wochenschrift,* Sept. 8, 1908) reports seven cases of acute non-suppurative thyroiditis, all occurring in females, mostly young unmarried women. In two there was a preëxisting slight hyperplasia. The affection was usually of acute onset, often accompanied by chill and high fever. Pain in the neck was the first local symptom complained of, spontaneous and greatly aggravated by swallowing, much like that incident to sore throat. The pain radiates toward the ear and back of the head, and is often associated with dyspnea. In one case there was a neutrophilic leucocytosis of 17,000, followed later by post-infectious lymphocytosis and eosinophilia. None of the cases reported was seriously ill, though it was noted at times that swallowing might be quite impossible and the pain wearing and severe. In two of the cases reported there was a preceding attack of influenza, in one a pleuritis, in one a circumscribed pneumonia, and in two others probably an influenza.

As to the diagnosis, this is stated to be easy, if one thinks of the thyroid and examines it. Otherwise pain incident to swallowing may lead to suspicion of sore throat.

The differential diagnosis between thyroiditis and strumitis is likely to depend upon a previous knowledge of the contour of the thyroid upon the part of the surgeon.

The prognosis is almost absolutely good. Though distinct thickening may persist for weeks, suppuration, particularly frequent after typhoid and sepsis, is rare after the other forms of acute thyroiditis. Dyspnea from pressure is the only real threatening danger. This is readily removed by tracheotomy.

Treatment depends upon the underlying cause. If the condition develops in the course of rheumatism, salicylates are indicated; in the course of malaria, quinine. Ice may be helpful to the pain. On subsidence of acute symptoms the author advises painting with iodine. Internal use of iodine preparations is especially to be avoided. In one case in which during convalescence syrup of the iodide of iron was given a severe recurrence was observed. Suppuration always calls for operation. In some cases acute thyroiditis precedes the development of Basedow's disease.

MASTOPEXY.

By this title DEHNER (*Münchener medicinische Wochenschrift,* Sept. 8, 1908) describes an apparently cosmetic operation by means of which he treated a corpulent woman possessed of bilateral "exquisiter" hanging breasts. The patient, thirty years old, noted that during the five years of her married life her breasts had increased enormously in size and weight; chafing led to distressing eczema. After careful but fruitless search of the literature to discover methods by which this condition might be remedied, Dehner adopted the following procedure: He excised a large ellipse of skin and subcutaneous tissue from the upper periphery of each mamma, which produced a marked diminution in size. To correct the low position of the gland he fixed it to the periosteum of the third rib, first splitting the pectoralis major and

minor. Three sutures were employed, each taking a deep grip of the glandular substance of the breast and of the strip of periosteum of the rib. As a result of this procedure both in position and size the breasts were almost normal. Dehner commends the operation in cases of hanging heavy breasts, especially when complicated by eczema, if patients offer no objection against somewhat conspicuous scars.

TREATMENT OF LATERAL CURVATURE.

BRADFORD and SOUTTER (*American Journal of Orthopedic Surgery*, August, 1908), after briefly alluding to the admirable work done in this direction in recent times, believe that it would be justifiable to expect a formulation of a method of treatment which would be generally accepted as reliable. At present, however, though it will be admitted that the knowledge of scoliosis has been improved and that the principles of treatment are well understood and that progress has been made, it cannot be claimed that in practice this treatment is as satisfactory as is desirable.

The methods of treatment are correction by plaster-of-Paris corsets applied successively to a corrected position, stretching contracted ligaments and fasciæ—*i.e.*, flexibility exercises and gymnastic exercises.

Plaster-of-Paris jackets have many times been demonstrated as both effective and practicable. They are, however, extremely uncomfortable, and their constant use engenders muscular weakness so marked that after removal of the jackets thorough gymnastic training is needful. Plaster jackets should be employed for the shortest possible period, and should be followed by light removable corsets, which are also effective in correction.

If an appliance will maintain a correct position with a minimum of discomfort, with the least possible amount of injury to the muscles, such an appliance will be a great advantage as a supplement to or as a substitute for plaster jackets. Apparatus is, however, too frequently heavy, unsightly, and cumbersome, or if the reverse, of doubtful efficiency.

In less severe cases, or when a plaster jacket is impracticable, corrective exercises are usually employed, and this is done either by free exercises—*i.e.*, without apparatus—or by fixation of the trunk by the aid of appliances.

In cases with structural changes free gymnastics have little if any corrective value, whilst the correction exercises imply such complication and expense as to make them available only to those who frequent well-equipped institutions. As in a large number of cases the curves do not increase and the affection becomes self-limited, involving only a slight disability, patients prefer to take their chances rather than be subjected to a tedious and wearisome treatment which interferes with the natural enjoyment of life. The authors state that the desiderata for flexibility exercises are: (1) Exercises which will stretch such portions only of the spinal column where it is desirable stretching shall take place. (2) Appliances which shall be cheap and simple in construction.

As to fixation apparatus, they state that there are two ways in which fixed plaster jackets can be improved. First, in the method of application; secondly, in diminishing the amount of pressure area of the corset in order to enable the weaker muscles to develop rather than to atrophy still further. For the application of a plaster jacket they describe an upright frame in which the position of the patient can be changed as desired, as can, also, the amount of correcting pressure. The plaster jacket to be effective should be applied above the axilla and arranged so as to include the neck. If it is applied in such a way that it is reënforced by plaster-of-Paris ropes or bands it need not be as thick in all directions as it is in the portion thus reënforced. It should also be cut out as much as possible in order to allow expansion in certain directions, so that respiration may be used as a correcting force. Of the removable appliances, those made of leather are the most effective. As usually made they exert com-

pression on the muscles and are therefore undesirable. An ingenious, efficient, and cheap steel brace is described.

As to gymnastic exercises, it is advised that the scoliosis corrective exercise designed to increase the flexibility of the spinal column is best done with the muscles relaxed, as well as developing exercises, to strengthen weakened muscular tissue. The former are helped by some mechanical aid, in order to prevent any increase in flexibility in the wrong portion of the spine. Developing exercises are used to strengthen the muscles which hold the patient in the proper attitude.

MULTIPLE DIVERTICULA OF THE SIGMOID FLEXURE.

TELLING (*British Medical Journal*, Oct. 31, 1908) observes that multiple diverticula of the sigmoid flexure constitute a condition which in its clinical importance calls for the closest attention and study. Diverticula occur in practically any part of the small and large bowel. They are divided into two kinds—congenital and acquired; these are usually easily to be differentiated from one another. The most familiar example of the congenital variety is Meckel's diverticulum. Acquired diverticula are of most frequent occurrence in the large bowel, especially in the lower part of the descending colon and the sigmoid flexure. Here they occur mainly in two rows, either at the sides of the gut or close to the mesenteric attachment, more rarely on the convexity; perhaps the commonest situation is into the appendices epiploicæ. In size they vary from mere macroscopic visibility to the size of a hazelnut, rarely larger. When small they are semiglobular, but tend to become somewhat flask-shaped as they increase in size. The aperture into the lumen of the bowel is generally smaller than the maximum diameter of the diverticulum; this is an anatomical fact of great importance with regard to the causation of inflammation within them. Usually not found much above the middle of the descending colon, they increase in number and size from above downward, and may be quite crowded together in the sigmoid flexure. At the commencement of the rectum they usually stop abruptly. They are almost invariably filled with fecal material, generally concretions of some degree of firmness; this fact probably determines their subsequent clinical importance, and sharply distinguishes them from acquired diverticula in the small intestine, which rarely contain fecal material. In these hernial protrusions all the coats of the bowel may be represented, though in many the muscular coat is absent or scanty.

No case has been recorded in a child; the majority are in old or even aged subjects, the youngest being twenty-two. The average age in 80 cases was sixty years. About 65 per cent are males. Many examples have occurred in obese subjects, or in subjects who have been obese at some previous time, or in whom there exists a considerable deposit of fat in the gut wall. Such excess of fat probably explains the frequency with which the appendices epiploicæ are invaginated by the diverticula. But the presence of excessive fat is not invariable. The normal anatomy and physiology of the sigmoid flexure undoubtedly favors the production of hernial protrusions of its wall. The normal sacculation of the colon is often exaggerated in constipation, and is sometimes found in association with these diverticula. In this portion of the bowel, again, is the longest retention of fecal material, and consequently the pressure from within will be liable to be greatest.

Graser's researches led him to the conclusion that when there existed congestion and back pressure in the mesenteric veins, from whatever cause arising, and especially when such congestion was an intermitting condition, the points of entry of the vessels through the gut walls became thereby still weaker spots and favored the occurrence of hernial protrusions through them. But his work has not been confirmed. On the other hand, Sudsuki, whose researches contradict Graser's conclusions, thinks that the lax and fat-containing connective tissue

around the vessels is the cause of the weakness of the wall at their points of entry, and that if such fat, having been previously abundant, becomes wasted from disease, there will result in each case a still more pronounced *locus minoris resistentiæ*.

The majority of diverticula occur at points of vessel-perforation; but some diverticula occur at the convex side of the bowel, remote from the points of entry of the vessels, and these cases require further explanation. Undoubtedly the vessels largely "direct the path" of the diverticulum formation, but they cannot be the cause of the formation of those protrusions remote from the vessel-holes. Muscular weakness or deficiency has been suggested as the primary cause—a view first put forward by Schreiber. Beer finds in the "worked-out" muscularis of senile individuals, who frequently have been constipated or obese, a sufficient explanation for all cases. Areas of muscular thinning have been noted by Wilson in some of W. J. Mayo's cases, as well as by other observers, but whether they are a constant or indeed frequent antecedent requires much more investigation. It is possible that there may exist a congenital arrangement of the muscle fibers of the gut, which in later life and under certain conditions leads to those areas of thinning or muscular insufficiency, but the author is not aware of any research which has been undertaken with a view to specially elucidating this point.

From the chronic irritation there results considerable inflammatory thickening outside and between the diverticula; this leads to general thickening of the gut wall. Of all the secondary processes this chronic proliferative inflammation is the most important, the most frequent, and probably the most overlooked. It may be very considerable in degree, from ½ inch to 1½ inches in thickness, and the inflammatory tissue is tunneled by the diverticula, or, in addition, by small secondary abscesses and fistulous cracks resulting therefrom. The inflammatory mass is often regarded as carcinomatous either during life, at operation, or at autopsy; the correct diagnosis being made in some cases accidentally on routine microscopic examination. Sometimes the specimens have been called "simple" inflammatory stenoses, the primary cause of the inflammation being overlooked. In this way many specimens on museum shelves are incorrectly labeled, and the writer has examined some of them, and been rewarded, on searching the rugose mucosa with a probe, by the finding of the orifices and tracks of numerous diverticula.

The direct results of this peridiverticulitis are: (1) Tumor formation; (2) stenosis of the bowel from cicatricial contraction, leading to chronic obstruction; and (3) the mimicry of carcinoma. There can be no doubt that many "cures" of carcinoma have occurred in cases of this kind.

The condition is of much greater frequency than has been supposed. Telling has been able to collect 107 cases, 24 of which he has added to the existing literature. He believes that reëxamination of specimens in the various museums would at once add to this number, and that routine close inspection of the sigmoid flexure—often a neglected structure at autopsies—and of sigmoid tumors removed at operation will in the future still more considerably augment the list of cases.

HEMORRHAGES FOLLOWING OPERATION.

KOHN (*Surgery, Gynecology, and Obstetrics,* November, 1908), actuated thereto by a number of cases occurring in his own practice, has made a study of hemorrhage from the stomach and bowels following operations on the gall-bladder and appendix.

As to prophylaxis and treatment, first and foremost, the patient should have his gastrointestinal tract carefully prepared for days in advance of the operation by non-irritating enemas and cathartics, and semi-solid bland diet. Next, if there is arteriosclerosis, with its attending complications, iodides in small doses may be given for weeks in advance with great further advantage to the patient, and so on through

all of the indications for the various accidents that may arise. A few days preceding the operation calcium chloride, either in enemas or by mouth, should be given in repeated doses.

Laughing-gas mixed with oxygen should be the anesthetic of choice; the operation should be terminated as quickly as feasible, and the attention of the surgeon confined as nearly as possible to the site to be operated on, after the pylorus and pancreas have been carefully explored. There should be as little handling and tearing of tissues as is consistent with the needs of the case, and no unnecessary manual exploration of other organs, if the diagnosis is clear. After the termination of the operation, the patient should be slightly elevated as soon as his strength allows it, and had best receive a dose of morphine, or better still, stypticin, unless there are renal contraindications. Food should be withheld for some days, and the nourishment confined to easily assimilable fluids after one day or more of complete starvation, depending on the strength of the individual. Milk should be eschewed, on account of its peculiar liability to cause gas.

If, in spite of all of our precautions, hemorrhage intervenes, we should begin with gastric lavage and small doses of such styptics as stypticin and morphine hypodermically. It is often of advantage to add a small amount of ferric chloride to the water used in washing out the stomach, and it should be gradually cooled. In one of Kohn's cases he used iced ferric chloride solution with seeming benefit to the patient. If there is collapse from loss of blood or shock, it is of great advantage to add calcium chloride either to the salt infusion or to the constant irrigation, as the case may be. The writer has always feared to use gelatin hypodermically, even when in the form now made by Merck, but confines its use to administration by mouth. Ergot in any of its forms he has never found of benefit in combating this form of hemorrhage, and strychnine, adrenalin, and other heart tonics are distinctly dangerous in cases of bleeding, especially adrenalin, which notably raises the arterial tension. Best of all he has found stypticin, which may be given repeatedly in three-fourths-grain doses without harm.

The following are probably the causative factors in postoperative bleeding:

1. Age. The danger increases gradually in patients sixty years old and above, owing to the rigid blood-vessels; and also in the very young, especially in cases of gangrenous appendicitis.

2. Previous history. Latent gastric and duodenal ulcerations which are lighted up during the course of the operation.

3. Traumatism of stomach, duodenum, and bowels incident to handling during operation.

4. Anemia and marasmus.

5. Infection, local and general.

6. Heightened blood-pressure in coexisting heart and lung diseases.

7. Thrombosis and embolism of gastric and intestinal vessels.

8. Atrophy and amyloid degeneration.

9. Gastroduodenitis, leading to hyperemia, pressure necrosis, and diapedesis.

10. Nervous disturbances causing anemia or hyperemia, with subsequent necrosis and ulceration.

11. Postoperative vomiting, which is a very important factor in the lighting up of old ulcerations.

12. Traumata to tongue, incident to the narcosis.

13. Ligating of omental and mesenteric vessels, causing direct and retrograde embolism or thrombosis, whether infected or not from the primary focus.

GASTRIC TETANY.

BROWN and ENGELBACH (*Surgery, Gynecology, and Obstetrics,* November, 1908) define gastric tetany as a grave complication of obstruction of the pylorus, characterized by attacks of chronic bilateral tonic contractures, beginning in the extremities and extending to the face, body, and larynx. They particularly emphasize the obstruction of the pylorus as an anatomical cause for this particular variety of tetany. They

note that no matter what the lesion may be, the clinical course and findings of a high grade of motor insufficiency of the stomach are usually present. The onset of the convulsion is usually sudden, beginning with sensory disturbances in the hands and feet, which are soon followed by spasms of the distal flexor muscles extending rapidly to the muscles of the extremities of the body. The slightest convulsive phenomena are those of creeping numbness, formication, and slight tonic contractions, particularly located in the hand or face. Slight symptoms may be present for a long time without classical convulsions, or they may immediately precede a typical attack of generalized convulsion. The pathognomonic sign of tetany convulsions, which differentiates them from convulsions due to other causes, is the fact that some of them can be reproduced by mechanical or electrical stimulus during the interval between the attacks. The mechanical superirritability of the facial nerve is evidenced by contraction of the muscles supplied by the individual branch of this nerve irritated by tapping. Mechanical irritability of the nerves of the upper extremity is shown by typical contracture of the hand and forearm being produced by constricting the arm. This Brown and Engelbach attribute to venous congestion, since they note that it comes on slowly.

The prognosis is grave in the absence of surgical intervention. Symptomatic treatment must be given during the attacks, and this expeditiously. It consists in stomach lavage, hypodermoclysis, proctolysis, and morphine hypodermically. Radical surgical treatment, depending upon the lesion present, is the only rational treatment that should be considered. This was first advocated by Mayo Robson, who has reported three cases cured by this means. Fleiner (two cases), Gumprecht, and Caird have reported cases due to cicatricial stenosis of the pylorus which have been cured by operation. Cunningham has collected eight cases, and Warbasse has collected six cases which were also cured by this method. Jonnesco collected eleven cases which had been operated upon with eight recoveries. The operation of election depends necessarily upon the conditions present in the individual case. In the majority of the cases operated upon successfully, pyloroplasty or gastroenterostomy was performed.

EXPERIMENTAL STUDIES OF THE RESULTS OF NEPHROTOMY IN THE HUMAN KIDNEY.

SIMON (*Beitr. z. klin. Chir.*, 59 Band, 2 Heft, August, 1908) contributes a paper on this subject. Some surgeons regard nephrotomy as practically a safe procedure, others as being by no means devoid of danger. A number of cases of dangerous and even fatal after-hemorrhage have undoubtedly occurred, while when an opportunity has been afforded of investigating a previously nephrotomized kidney, it has been found to be greatly shrunk. Langemak, working on rabbits, and Hermann on dogs, found that after every cut of sufficient depth greater or less necrosis occurred, the former estimating the loss by infarct as one-quarter of the kidney parenchyma, the latter one-half. This necrosed tissue might be gradually absorbed, leaving a linear scar and a shrunken kidney. These results are, however, of doubtful value, as the vascular distribution in the human kidney is different from that in animals.

The arteries of the kidneys are functionally end-arteries, the capillary anastomosis being insignificant; hence the amount of damage done to the kidney by an incision will depend on the number of arteries divided. This damage can only be discovered by subsequent examination of the kidney, the recovery of full functioning power being no criterion, as compensatory hypertrophy may occur. There is not yet enough material for a definite decision, and accordingly Simon has attempted a solution of the question by experiments on the dead body. He makes an incision in the kidney, and then injects the vessels with a mixture containing quicksilver and turpentine, which is opaque to the Roentgen rays. A Roentgen photograph of the kidney is then taken,

and the uninjected area indicates the part whose vessels have been divided, and therefore corresponds to an infarct in the living kidney. From an anatomical standpoint two incisions are permissible, the longitudinal and the transverse.

The longitudinal incision is made ½ to 1 centimeter behind the summit of the convexity of the kidney, Zondek having pointed out that this is the line of cleavage between the dorsal and ventral systems of renal vessels, though at the poles it approaches more closely the middle line. This is the usual incision, theoretically perfect, but practically followed by severe bleedings in a very appreciable percentage of cases.

The transverse incision is based on the fact that on the anterior surface of the kidney and its pelvis the vessels radiate, and that on that surface an incision can be made parallel to the radiating arteries through the whole parenchyma, and extending into the pelvis, with practically no damage to vessels. Marwedel tried this transverse incision in five cases of nephrolithotomy with good results, obtaining better access and having less bleeding. The incision is made at the middle of the kidney, and if any lobulation shows on the surface the sulcus between two lobules should be chosen.

Simon tried by his method of investigation the longitudinal and the transverse incision, each in twenty cases. Of the longitudinal cases, nine showed practically no destruction of kidney tissue, while the remaining eleven averaged a loss of one-nineteenth of the kidney substance. The corresponding figures for the transverse incision were thirteen with practically no destruction, and an average loss in the other seven of one-eighteenth of kidney tissue. It is thus apparent that either a longitudinal or transverse incision may be made with little injury to the kidney parenchyma if anatomical considerations are observed. There are various theoretical and practical points, however, in favor of the transverse incision. It can be made and deepened step by step under the guidance of the eye. Not more than one, or at the most two, of the smaller arteries can be injured, while none of the main branches lie in the line of incision, and the exact situation of these chief branches can further be determined by palpation. The access to the pelvis of the kidney is good. The deeper parts of the longitudinal incision, on the contrary, cannot be made under a similarly complete guidance by the eye. The interval between the dorsal and ventral system of vessels is really not a zone of some thickness, but almost a true plane, and it is easier, therefore, to wound vessels than in the transverse incision.

In conclusion, Simon points out that the different directions of the dorsal and ventral chief branches of the renal artery render it essential that a longitudinal nephrotomy should open only the dorsal half of the pelvis of the kidney, while a transverse incision should be prolonged into the pelvis only on its anterior surface. Incidentally his experiments showed that the plane of cleavage between dorsal and ventral vessels is closer to the median plane of the kidney (½ to ¾ centimeter) than is usually described.—*Edinburgh Medical Journal,* November, 1908.

THE PRODUCTION OF AMPUTATION STUMPS CAPABLE OF BEARING WEIGHT.

HASHIMOTO and SAITO (*Archiv für klinische Chirurgie,* Bd. 86, Heft 3), basing their description upon experience in the Russo-Japanese war, report their results in the use of the Hirsch method of after-treatment of amputation stumps so as to render them capable of weight-bearing. Amputations in time of war must be hurriedly done as a rule; in consequence the circular incision is the one adopted. As a result of this after the stump has healed the scar is directly over the end of the bone, rendering the stump almost, if not quite, useless for weight-bearing. The method of after-treatment published by H. Hirsch in 1899 and used by the authors is based upon the principle of increasing the resistance of the tissues and overcoming their tender-

ness by massage, and exercises in standing and walking.

The plan of treatment is outlined as follows:

1. Put the patient to bed with the limb elevated.
2. Massage several times a day either dry or with two-per-cent oil of wintergreen.
3. Pack in wadding after massage.
4. Treading exercise five to ten minutes three or four times a day.
5. Voluntary movements two to four minutes after massage and treading exercise.
6. Lysol bath every evening.
7. Exercise in standing several times a day upon a provisional prosthetic appliance whose hollow part is filled with wadding.
8. Exercise in walking with this apparatus.

The authors have treated in this way 38 officers and soldiers who had suffered amputation of one or both lower extremities, the amputations involving all parts of the limbs, with excellent results in all cases.

TREATMENT OF MASTITIS.

FEINEN, of Bardenheuer's clinic (*Deutsche Zeitschrift für Chirurgie,* Bd. 94, Heft 3 and 4), recognizes four forms of mastitis, namely, simple acute mastitis, mammary abscess, interstitial or parenchymatous, and gangrenous mastitis, to which may be added a fifth, or tuberculous form.

In the acute form the patient was put at rest, the child kept away from the breast, a laxative given, and the breast held up with moist bandages. In two to four days the inflammation had subsided. The Bier hyperemia treatment is not, as is claimed by some, suited to these cases.

In case of abscess a puncture was made, hyperemia produced by means of the Bier apparatus, and a wick drain put in. The cosmetic result was good. The scar was small, in a few weeks became invisible, and there was no retraction about the scar.

The third form is called the interstitial or parenchymatous because both the connective and the glandular tissue are implicated, at times the one and at times the other being the more extensively involved. In these cases the operation devised by Bardenheuer was performed. This consists of making an incision along the lower border of the gland, separating the gland from the pectoral fasciæ and raising it up. Then all the inflammatory tissue is removed. In one case of intracanalicular mastitis nothing was left in the affected portion of the gland but the skin and subcutis. The object is to secure a clean wound surface. The wound is drained. In all cases thus treated the results, including the cosmetic effect, were good. Healing takes place in five to eight weeks; it can be hastened by secondary suture of the wound. The patient can be out of bed in ten to fourteen days. The wound should be dressed every three or four days. After healing has occurred it is difficult to distinguish the affected from the healthy gland. The scar is not visible as it is hidden under the gland. No fistulæ result from this method, and no scar is left on the surface to give rise to the danger of carcinoma. Furthermore, sepsis has never resulted in cases operated upon by this method, as no focus of disease is left undetected, as is sometimes the case when operation is done by multiple punctures or radiating incisions.

In gangrenous mastitis, which in both the author's cases was bilateral and involved the lower half of the breast, the affected part of the breast was removed and the other part drained. Both patients recovered. In a case of tubercular abscess excision was practiced, and in a case of puerperal tubercular mastitis the entire gland was removed.

THE DIAGNOSIS AND TREATMENT OF RENAL AND URETERAL CALCULI.

THOMAS (*Liverpool Medico-Chirurgical Journal,* July, 1908), basing his paper upon a series of 32 cases operated upon during the last three years, 28 of which were carefully analyzed as to symptomatology, noticed that only seven of these patients ever

had what could be described as a typical renal colic. All these seven exhibited either hematuria or pyuria, or both. Colic was the only symptom in one. Dull aching pain in the loin was the commest symptom. It occurred even when the stone was fixed to the kidney substance. It was almost continuously present in 21 of the cases. In six it was the only symptom. In 15 it was associated with either a pyuria or a hematuria.

Thomas states that the success met with in localizing calculi by the *x*-rays is now so positive, even in very small stones, that he would not operate on kidney or ureter stones without this conformation. He states that when the stone is small, and renal colic a symptom, the calculus is loose in the pelvis. Flushing the kidney by large imbibitions of liquid to increase the flow may be tried, in the hope that the stone will pass down the ureter.

He would operate only when the radiograph clearly demonstrates that the stone is large, or when the calculus is small, if the lumbar pain is persistent or associated with pyuria or hematuria (indicating damage to kidney structure), or if after repeated attacks of renal colic the calculus is still in the ureter or kidney.

Of the 23 calculi examined there was not a single uric acid stone; traces of uric acid were found in three only, and in each of these there was a large preponderance of oxalates with traces of phosphate. In only two were carbonates found in fairly large quantities; these also contained oxalates and phosphates. The calculi were, in fact, all oxalate of lime and phosphates. It was quite impossible to say either from their color or shape, or microscopically, whether the calculi contained oxalates and carbonates or uric acid.

As to operation, the prone position, with a pillow under the abdomen, gave the best exposure, the air pillow being the one of choice. A 5-inch incision is made an inch below and parallel to the last rib; the kidney is brought out on the loin if possible; the air cushion is allowed to become relaxed, and the pelvis of the kidney is carefully explored, together with the upper end of the ureter. The vessels of the hilum of the kidney are either clamped or held with fingers, and the kidney is incised on its long axis—a little posterior to its convex margin —until the pelvis is reached, when, on introducing the finger, the calices can be readily explored and the calculus felt and extracted by forceps or scoop. A few stitches are introduced into the fibrous tissue of the calices and mattress sutures through the kidney structure in two tiers, tying each tier of sutures on opposite sides; a few interrupted sutures are introduced into the capsule. Drainage is inserted down to the surface of the kidney. Hematuria persists for a day or so and is usually mild, though in one case Thomas reopened the loin wound and removed the kidney. In two other cases the pelvis of the kidney over a large calculus was quite friable—it tore like wet blotting-paper, and with it a large vein, leading to alarming hemorrhage, which required immediate extirpation of the kidney to prevent disaster. In a series of 33 patients, three lost their kidney—one as a direct result of the operation, and due to the operation; two because the damage to the kidney by the calculus and suppuration led to tearing of a large vein and the excision of the kidney. One patient died from pneumonia a week after the operation, the loin incision having healed.

The symptoms and signs of calculus in the ureter are generally the same as those of a stone in the kidney, colic being more frequently mentioned as a previous symptom. When the stone is in the upper portion of the ureter the usual kidney incision suffices. A longitudinal cut is made in the ureter, which is afterward sutured with fine catgut, and drainage is applied at the seat of suture. If the calculus is in the middle third of the ureter, McBurney's incision is advised and afterward the peritoneum is peeled up. The calculi in the lower third of the ureter are difficult to deal with—just too far from the perineum in the male or vagina in the female, and just beyond easy reach from the groin. Thomas commences by approaching through the vagina in the

female; through the perineum in the male. The incision may be supplemented by an abdominal section, through which the stone may be pushed down.

LUXATION OF THE PELVIS.

GRIMBACH (*Deutsche Zeitschrift für Chirurgie*, Bd. 94, Heft 5 and 6) says that outside of the accidents of childbirth true luxation of the pelvis is quite rare. He reports two cases, both of which resulted from the fall of a stone upon the patient's back while he was in a stooping posture. In both cases there was severe pain in the pelvis and inability to walk. In one case there was bloody urine, but no demonstrable laceration of the urinary tract. In both cases the *x*-rays were used to complete the diagnosis, and showed in each case luxation at the pelvic symphysis and at the left sacroiliac joint.

The treatment consisted in reducing the displacement as well as possible, in the second case under ether, and applying at first an extension apparatus, and later a plaster-of-Paris bandage. Also a bandage was placed around the pelvis to make lateral pressure. After ten weeks' treatment the first patient was dismissed with some lameness of the left side and the crest of the ilium 2 centimeters higher than the right, with corresponding shortening of the extremity. There was no pain on walking. The second patient was discharged two months after injury without deformity, but the sacroiliac joint was still painful on percussion and the limb soon tired on walking.

FIBROLYSIN IN CICATRICIAL PYLORIC OBSTRUCTON.

So many scattered communications have appeared concerning the solvent action of fibrolysin upon cicatricial tissue that the use of the drug still remains of interest to both the practitioner and the surgeon, though the proof as to its efficiency has not yet been adduced.

STEUART (*British Medical Journal*, Aug. 29, 1908) contributes the ordinary type of case in which a patient presenting the obvious symptoms of pyloric obstruction was greatly bettered by the hypodermic administration of fibrolysin in the epigastric region in the dose of 2 centimeters daily for a month, every other day for a week, and thereafter at intervals of three or four days for three weeks more. The patient became comfortable in a fortnight and was shortly able-bodied. Steuart states that one factor necessary to success in the treatment of adhesions by fibrolysin is that they must be in such position that they can be massaged and stretched; otherwise, though they are rendered soft, they remain in the same relation to surrounding tissues and no good results can be obtained.

LOCAL ANESTHESIA OF JOINTS.

BIER (*British Medical Journal*, Aug. 22, 1908) at the thirty-seventh German Congress of Surgery, held in Berlin in April, 1908, described a new method of applying local anesthesia, which he advised for operations on joints, especially the elbow or knee. The limb is first rendered bloodless by an Esmarch bandage, then a constricting bandage is left above and below the joint, and the first bandage is removed. A suitable vein is then exposed—the median or saphena answers well for the purpose—and 100 cubic centimeters of a ½-per-cent solution of novocaine solution is introduced into the vein. Complete anesthesia results as high as the upper compressing bandage. In a few cases Bier only obtained analgesia, but in the majority complete anesthesia was present within a few minutes of carrying out the injection. The novocaine is dissolved in physiological salt solution, and 100 to 150 cubic centimeters suffices for all cases. Intoxication need not be feared as the solutions used are weak. The lower bandage should be removed before the upper one is loosened, but Bier finds that the solution can be washed out of the vein with saline fluid if any apprehension of a toxic effect is present. In the case of amputations, the fluid escapes of itself.

REVIEWS.

MEDICAL GYNECOLOGY. By Samuel Wyllis Bandler, M.D. W. B. Saunders Company, Philadelphia, 1908. Price $5.00.

It was pointed out in a recent editorial by Martin, of Germany, in which he gives an account of his recent visit to this country, that gynecology seems to mean in the United States merely abdominal surgery, in view of the fact that only a few of the gynecologists pay any attention to so-called minor gynecology, and all seem to regard operations on the appendix, gall-bladder, and kidneys as pertaining to their domain. The appearance of Dr. Bandler's book is therefore particularly timely and will doubtless be a welcome addition to the library of many general practitioners, particularly in country districts where the services of a skilled gynecologist cannot be obtained. The author points out that in no field of medicine is conservative treatment of greater value, and he has endeavored to show the relationship which exists between pelvic abnormalties and the physical and mental state of the patient. In many instances he almost crosses the border-line between medical gynecology and surgery, as, for example, in the discussion of tumors of the urethra and ectopic gestation. Some of the chapters seem to us a little too much condensed, as, for example, that upon Syphilis, which only covers ten pages. In this chapter, however, are a goodly number of prescriptions which are supposed to indicate the author's own methods in the treatment of localized specific lesions. In the matter of definite directions to the physician as to the drugs which shall be used locally and internally the book is exceedingly adequate, illustrative prescriptions in great number being found scattered through its pages. It is not, and does not seem to profess to be, what might be called a scholarly work upon gynecology, but rather gives such information as would be obtained by a student who might attend clinics which were given by the author. In some instances the prescriptions which are given are manifestly those which are placed upon the market by manufacturing druggists rather than formulæ that have been devised by the author himself, but the presumption is that he would not have included them had he not found them of value.

CONSUMPTION: HOW TO PREVENT IT AND HOW TO LIVE WITH IT. By N. S. Davis, A.M., M.D. Second Edition, thoroughly revised. F. A. Davis Company, Publishers, Philadelphia, 1908. Price $1.00, net.

This book, as set forth in the preface, is intended for the instruction of the laity. The matter contained in the chapters devoted to the cause and prevention of consumption follows the accepted lines of thought. We are surprised, however, to see in a modern book on the treatment of tuberculosis, and one intended for the instruction of patients, so much space devoted to climatic resorts. No less than 37 pages are given up to this phase of the subject, while "home treatment" is dismissed in two short paragraphs. It would seem that the 98 per cent unable to avail themselves of anything but "home treatment" were deserving of more encouragement and detailed information.

The section on diet is entirely lacking in specific details so necessary for the successful management of tuberculosis. The use of cod-liver oil, now entirely abandoned by modern phthisiotherapeutists, seems to be a favorite remedy of the author.

The recognized dictum in the treatment of tuberculosis is that while rest can never do harm, exercise injudiciously taken may or may not do so. It is to be remembered that indiscretion in the amount and character of their exercise is the great pitfall of most tuberculous patients. While the

advice given in the section dealing with exercise is for the most part according to accepted ideas, some of it is unwise, as, for instance: "I frequently advise patients in the early stages of the disease, without fever, and especially those predisposed to it, to practice running daily."

H. R. M. L.

A System of Medicine by Many Writers. Edited by Sir Clifford Allbutt, K.C.B., M.A., M.D., LL.D., and H. D. Rolleston, M.A., M.D., F.R.S. Volume IV, Part II. Macmillan Co., London, 1908.

We have already pointed out in the review of Part I of Volume IV that the sections upon diseases of the ear, and also those upon the diseases of the nose, pharynx, and larynx, had been placed in a separate volume in distinction from the method in which they were dealt with in Volume IV of the original or the first edition of this work. The present volume deals solely with diseases of the upper respiratory tract and adjacent organs, including the ear. There are introductory chapters upon the methods of examining the nose, throat, and larynx, and a closing chapter, covering about 100 pages, dealing with diseases of the ear, including therein both medical and surgical methods of diagnosis and treatment, and the subject of deaf-mutism. The illustrations are, many of them, excellent, and the colored plates are much better than are usually found in medical works. Although this volume is of interest almost solely to the specialist, in that it deals exhaustively with the subjects we have named, it serves to make the entire system, which has been so well edited by Sir Clifford Allbutt and Dr. Rolleston, a complete exposition of modern medicine.

Squire's Companion to the British Pharmacopœia. Eighteenth Edition. P. Blakiston's Son & Co., Philadelphia, 1908. Price $5.00.

Squire's Companion to the British Pharmacopœia is perhaps better known in the medical profession and to pharmacists than the British Pharmacopœia itself, as it appeals to them as a practical manual, and in its various editions is now over fifty years old. The ninth edition, which appeared in 1873, contained 12 pages of pharmaceutical information and 427 pages of text and index, whereas the eighteenth edition contains 42 pages of the former and 1417 of the latter. The general arrangement adhered to in previous editions is still followed. Substances official in the British Pharmacopœia appear in large type, and those which are not official in small type, and all the facts needed by pharmacists are given under the heading of each drug with praticular reference to the subject of solubility. Paragraphs relating to medicinal properties have been revised by Dr. Taylor Graham and considerably enlarged, and many of them give very adequate information in regard to the therapeutic employment of the drug under discussion. The volume is one which contains a vast amount of exceedingly valuable information, and the present edition will prove even more useful for the persons for whom it is prepared than its predecessors, which is high praise.

Progressive Medicine. Vol. IV, December, 1908. A Quarterly Digest of Advances, Discoveries, and Improvements in the Medical and Surgical Sciences. Edited by Hobart Amory Hare, M.D., assisted by H. R. M. Landis, M.D. Lea & Febiger, Publishers, Philadelphia and New York. Price $6.00 net; in cloth $9.00 net.

The December issue of Progressive Medicine is fully abreast of the reputation of this quarterly for practical usefulness to every active medical man, whether physician, surgeon, or specialist. In fact, its contents are purposely limited to the clinical as distinguished from the theoretical aspects of medicine. As brief examples of these characteristics, we may cite only a few of the multitude of topics treated by Dr. Edsall, of Philadelphia, in his eighty pages on Diseases of the Digestive System, if possible the most important in the entire range of human ailments. He points out the clinical bearings of recent physiological researches on the stomach and of psychic

influences on digestion, deals with the results of recent *x*-ray advances in connection with this organ, devotes ten pages to Gastric Ulcer, Stenosis, and Carcinoma, revises to date the recently developed subject of intestinal diverticula, and illuminates the hitherto obscure field of diseases of the pancreas. In the same most cursory manner we may refer to the articles on Renal Tuberculosis and Syphilitic Nephritis in the section on the kidneys, written by Dr. John Rose Bradford, of London. Bloodgood, of Baltimore, has covered in a hundred pages the real additions to practical surgery during the year. His remarks on Surgical Shock deal instructively with a common and serious condition. He devotes twenty-five pages to advances in Surgery of the Blood-vessels, a subject of especial interest at the present time, and the same may be said of his articles on Surgery of the Joints. He closes with twenty pages on Tumors, thus completing in connection with his successive sections on these morbid growths the most important monograph on the subject in the language. Belfield, of Chicago, covers the latest advances in the genito-urinary field authoritatively in thirty pages. The assistant editor, Dr. Landis, closes the year with a Practical Therapeutic Referendum, reviewing the advances in both medicinal and non-medicinal treatment, and giving due prominence to untoward results following serum therapy.

PRÉCIS DE THÉRAPEUTIQUE ET DE PHARMACOLOGIE. Par A. Richaud. Masson et Cie, Paris, 1908. 12 francs.

This very excellent little book upon Pharmacology and Therapeutics contains a considerable amount of information which is not to be found in ordinary text-books upon this subject printed in the English language. Thus, for example, the opening chapters deal with the rapidity and conditions of absorption of the mucous membranes in various portions of the alimentary canal and respiratory systems, and with the ability of the mucous membrane of the genito-urinary tract to absorb drugs. These considerations are followed by a discussion of absorption from serous membranes and from the subcutaneous tissues. There are also opening chapters upon the accumulation of drugs and the relation between the physiological action and chemical constitution of remedies. Among the drugs which are not commonly employed in this country, but in which the author seems to have much confidence, is sodium fluoride, which is an antiseptic and which has been used to preserve wine, beer, milk, and similar substances, and in the treatment of cystitis with ammoniacal decomposition of the urine. Richaud asserts that in cases of cystitis with marked formation of muco-pus sodium fluoride not only arrests decomposition but has the power of dissolving the tenacious secretion, the bladder being washed out every other day with from 5 to 15 grains of sodium fluoride to a liter of boiled distilled water. He considers that sodium-methyl-arsenate is a specific in malaria, and advises picric acid in the proportion of 1 to 100 in acute eczema to allay excessive itching, and also advises the use of the lactic acid bacillus as an antiseptic in infantile diarrhea. He divides chronic arsenical poisoning into four classes, disturbances in the alimentary canal, disturbances in the larynx and bronchial tubes with eruptions, disturbances of sensation, and motor palsies. He also expresses the somewhat novel idea that the iodide of sodium is not as valuable in the treatment of aneurism due to syphilis as is the iodide of potassium. The book is an excellent one.

ESSENTIALS OF MEDICINE. By Charles Phillips Emerson, M.D. The J. B. Lippincott Co., Philadelphia, 1908.

Dr. Emerson has already presented the profession with a larger work than this upon the subject of Diagnosis in its relation to the methods carried out in the clinical laboratory. The present volume is designed for students beginning their medical course, for nurses and for others interested in the care of the sick. It is a distinctly elementary book, and we do not think that it has a large field of usefulness for medical

students, whatever it may accomplish in the minds of other readers. Many of the ilustrations are very crude.. The book is, we think, another instance of how difficult it is to prepare for the lay mind a description of medical subjects without permitting the layman to obtain quite an abnormal conception of physiological and pathological processes. We can see little advantage to the nurse or layman in being told that enterokinase activates trypsinogen, nor do we think that this class of readers should be taught that in uremia treatment must be prompt and active, that strong purges, such as croton oil, are to be immediately given, and that the patient should also be subjected to a sweat bath once or twice a day. So, too, we think that some of the descriptions, which are given in regard to the changes in the physiology and pathology of the heart, hardly adequately represent the views commonly held at present. So far as we can see, nothing is said in regard to the very important fact that glycosuria and diabetes are not the same thing, although it is stated that the finding of glycosuria in the urine once does not necessarily mean diabetes. Certainly it is not true that the presence of constant glycosuria is a sure sign of diabetes, as the text would lead one to believe. The somewhat odd statement that the "conscience" of the diabetic is evidently affected seems to us unnecessary.

DISEASES OF THE SKIN. By Sir Malcolm Morris, K.C.V.O. Revised Edition. With the Assistance of S. Ernest Dore, M.D. Cassell & Co., Limited, New York and London, 1908.

The last edition of this book appeared five years ago, the first edition having appeared in 1893. The author has not attempted to make it a complete treatise but rather a manual for dermatologists. A considerable number of plates illustrating phases in various skin diseases are found scattered through the volume. They are well executed and show clearly what they are intended to illustrate. A considerable number of prescriptions which the author has found useful are also included.

Malcolm Morris has been known for many years as an active investigator and practitioner in the field of dermatology, and the present edition of his book cannot fail to increase the excellent opinion which the profession already has in regard to his work.

THE NATIONAL STANDARD DISPENSATORY. Second Edition, Thoroughly Revised. By H. A. Hare, M.D., Charles Caspari, Phar.D., and Henry H. Rusby, M.D. Lea & Febiger, Philadelphia, 1908.

The National Standard Dispensatory is so well known to medical men and pharmacists that a description of its contents is not necessary. It is sufficient to announce the appearance of a second edition. Besides containing the Pharmacopœia and giving much additional information necessary to its satisfactory use in practical pharmacy, it also contains sections on the medical actions and uses of drugs, and a very large number of non-pharmacopœial or other unofficial remedies, the importance of which in some instances is as great as those that are official. The latest changes made in the preparations and strengths of the various preparations are also included, these changes being, in many instances, those which will probably appear in the Pharmacopœia of 1910. The first edition of this book required several printings to meet the demand. The second edition has been thoroughly revised and brought up to date. The contents of the National Formulary has been included in abstract, and also a formulary of other widely used non-official preparations which are not included in the National Formulary. The Pure Food and Drugs law of the United States, together with the decisions necessary for its interpretation, have also been included in its pages. The book closes with a general index of 120 three-column pages containing the names of drugs in the English, French, German, Italian, Spanish, and Latin languages, thereby rendering it easy to find the article on any substance used in medicine by civilized nations. A Therapeutic Index, of 20 three-column pages, follows.

ARTERIOSCLEROSIS. By Louis M. Warfield, A.M., M.D. The C. V. Mosby Medical Book Co., St. Louis, 1908.

This small volume of 165 pages discusses the etiology, pathology, diagnosis, prognosis, prophylaxis, and treatment of arteriosclerosis. A distinction between sclerosis and atheroma is apparently not made if we may judge from the first figure, which shows "atheromatous plaques" and "thin plates of bone with spicules extending into the lumen of the vessel." An introduction to the volume has been written by Dr. W. S. Thayer, with what object we cannot quite discern. The author states that he has attempted to present the general practitioner with a readable authoritative essay on a disease which is the outcome of modern civilization, and has laid especial emphasis upon the means of preventing this serious degenerative change, although he admits that "it comes to almost every one who lives out his allotted time of life," whatever this may be. When we turn to the chapter on prophylaxis we find the somewhat startling advice that "the prophylaxis of arteriosclerosis is moderation in all the duties and pleasures of life," and that "as one grows in years exercise should not be as violent as it was when younger, and food should be taken in smaller quantities." As the chapter on prophylaxis covers about nine pages, and no very definite statements are made in it, we confess that we know little more than before as to what we can do to prevent the development of these lesions. As a matter of fact part of the chapter on treatment should have been included in the chapter on prophylaxis, since by dietetic care distinct prophylactic influences can be brought to bear.

INFANTILISM FROM CHRONIC INTESTINAL INFECTION. By C. A. Herter, M.D. The Macmillan Co., New York, 1908. Price 90 cents.

Dr. Herter is well and favorably known to a large number of the profession as being a well-equipped laboratory worker, and at the same time Professor of Therapeutics in Columbia College. This little monograph is a study of the clinical course, bacteriology, chemistry, and therapeutics of arrested development in infancy characterized by the overgrowth and persistence of the flora of the nursing period. In other words, the author describes the chief features of an obscure affection of childhood, which is characterized by a general retardation in the growth of the body, implicating the skeleton, the muscles, and the viscera, although at the same time permitting a relatively fair development of the brain. The material which he has used is based upon five cases which he considers typical. In the treatment Dr. Herter believes in the use of alcohol and iron, and in the employment of cathartics and antiseptic medicaments, and particularly in the administration of the calomel and magnesium salts and phosphoric acid.

A HANDBOOK OF SUGGESTIVE THERAPEUTICS, APPLIED HYPNOTISM, AND PSYCHIC SCIENCE. By Henry S. Munro, M.D. Second Edition. The C. V. Mosby Co., St. Louis, 1908.

The object of this book is to bring before the profession not only the facts of personal experience as to the value of suggestive therapeutics in general practice, but also to give a detailed explanation of how to apply suggestive therapeutics efficaciously both with and without hypnotism. It is intended, we are told, "to instil into the vast mass of the profession, to whom this entire field is as yet terra incognita, those basic principles of physiological psychology upon which the scientific therapeutic application of suggestive treatment in all its forms necessarily depends." Throughout the volume words and sentences which the author wants to emphasize are put in heavy-face type, which gives a somewhat odd appearance to the page, and in some instances puts unnecessary emphasis upon unimportant statements. A considerable number of cases which are supposed to illustrate all the manifestations which are susceptible to these forms of treatment are cited, and the plan of treatment carried out by the author is given. One case cited is that of a man picked up in a perfectly helpless, half-drowned, wounded condition after the Galveston flood, who for six months lay in bed wearing a plaster cast because of injuries to his spine. Two years later he was hobbling on crutches, with

constant pain, insomnia, diarrhea, and headache. He received three suggestive treatments, with the result that all of his symptoms were relieved, including his indigestion and bowel complications. His crutches were put aside, and a week after the last treatment he was comfortable and happy. (*Verbum sap.*) There can be no doubt that a reputable physician must constantly exercise a mental influence over his cases, but he who is sufficiently fortunate to be able to produce results of this character is indeed equipped with extraordinary powers.

HUMAN FOODS AND THEIR NUTRITIVE VALUE. By Harry Snyder, B.S. The Macmillan Co., New York, 1908. Price $1.25.

The author of this book, who is Professor of Agricultural Chemistry in the University of Minnesota, has evidently prepared it with the idea that it would act as a text-book for his students, and as a means of presenting the facts which are essential from the standpoint of the scientific agriculturist and dietician.

The present volume completes a series of text-books begun by the author ten years ago dealing with such agricultural and industrial subjects as the "Chemistry of Plant and Animal Life," "Dairy Chemistry," "Soils and Fertilizers," and "Human Foods and Their Nutritive Value." Although it is evident that these subjects are closely related to one another, it has been the object of the author to avoid repetition as far as possible. The author is convinced that too little attention is usually paid to the study of foods in schools and colleges, and he evidently believes that matters of diet should be taught not only to medical men but to the laity as well. This, it seems to us, is an admirable conception of the needs of the day, although we fear, notwithstanding the fact that this book is small, but few of the laity will be sufficiently interested to read it through.

The volume opens with a discussion of the general composition of foods and the changes which take place in them during cooking and preparation. It then goes on to include vegetable foods, including fruits and the sweetening substances obtained from vegetables, milk and dairy products, meats, cereals, and those substances which are used chiefly in the form of drinks, such as cocoa, coffee, and tea. There are also chapters upon the digestibility of food, comparative cost and value of foods, and upon the value of water in connection with food. The last chapter of the book deals with laboratory practices or methods for the chemical, microscopical, and other plans of examination resorted to by students of hygiene and dietetics. A very large amount of the information given is very properly taken from, and credited to, the Bulletins of the United States Department of Agriculture. The book is a distinctly useful one, and ought to make a place for itself.

INTESTINAL AUTOINTOXICATION. By A. Combe, M.D. With an Appendix on the Lactic Ferments and Their Use in Intestinal Therapeutics. By Albert Fournier. Authorized Translation by William Gaynor States, M.D. Illustrated. The Rebman Co., New York, 1908.

We are told in the author's preface frankly that the object of this book is to make his own methods of treatment known. As Clinical Professor of the Diseases of Children in the University of Lausanne he has had many opportunities for studying the intestinal disorders of children, and also those of adults. The result of his study has been that the importance of gastrointestinal autointoxication has been forced upon him, and further he has devised dietetic plans which he believes are essential, and has promulgated their value to such an extent that he has arranged for the sale in hotels throughout Switzerland of dietetic prescriptions which he has prepared. The book is of a more scientific nature than that of Bouchard and presents many interesting facts in regard to this very important subject. The universal recognition of the fact that ordinary constipation is the cause of autointoxication makes it evident that many other abnormal conditions in the alimentary canal exercise a powerful influence upon the general economy, rendering it essential

that they be corrected either by changes in the character of the food or by the use of medicines or ferments which will hurry the digestive processes, improve peristalsis, or stop fermentation and putrefactive changes. All of these things are carefully considered, and a very large amount of excellent information is given in regard to the diet of patients who suffer from disorders arising from this cause. The use of lactic acid bacilli and drugs for the correction of the putrefactive and other changes is also described.

THE READY REFERENCE HANDBOOK OF DISEASES OF THE SKIN. By George Thomas Jackson, M.D. With 99 illustrations and 4 plates. Sixth Edition, thoroughly revised. Lea & Febiger, New York and Philadelphia, 1908.

The fact that this small and compact treatise on diseases of the skin has reached the sixth edition is sufficient evidence that it has supplied a want. While not professing to take the place of the larger text-books and others dealing with dermatology, it will be found most useful to the general practitioner. The space devoted to treatment is especially full, and is further supplemented by an appendix devoted to formulas which have been successfully used by the author in his practice.

BRADYCARDIA AND TACHYCARDIA. By Edmund von Nuesser, M.D. Translated by Andrew MacFarlane, M.D. E. B. Treat & Company, New York, 1908. Price $1.25.

This small volume forms one of the series which has already appeared upon "The Symptomatology and Diagnosis of Disorders of the Respiration and Circulation." It cannot be used as a text-book, nor is it apparently designed as a reference volume for practitioners. It is simply an essay designed to bring before the profession the views which the writer has in regard to these subjects. In an appendix, which takes up a goodly number of pages, histological data in regard to Stokes-Adams's disease are given. Not only the references but abstracts of the articles of Adams, Stokes, Gaskill, Erlanger, Moon, and a large number of other writers are presented. So, too, in connection with the subject of tachycardia a number of references and abstracts are given.

THE MEDICAL RECORD VISITING LIST. William Wood & Co., New York, 1909.

This Visiting List contains text in its first pages dealing with the probable duration of pregnancy, weights and measures, doses, solutions for hypodermic injection, directions as to surgical antisepsis, and a considerable amount of other interesting information which can be put in small space. It is bound in genuine black calf-skin, with and without a flap, and appears in three forms: One for 60 patients a week, with or without dates, price $1.50; one for 30 patients, with or without dates, price $1.25; and one for 90 patients a week, price $2.00. There are also other editions gotten up in more complete and sumptuous form for 60 patients a week for $4.00.

HEALTH, STRENGTH, AND HAPPINESS. A Book of Practical Advice. By C. W. Saleeby, M.D., F.R.S. (Edin.). Mitchell Kennerley, New York, 1908. Price $1.50.

If we mistake not the author of this book is he who some time ago received a large amount of attention in the newspapers because of certain theories which he promulgated in regard to cancer. The volume is apparently not intended for medical men but rather for the laity. As the author says, his "allusions to theory are quite casual and incidental." Some of our surgical friends will probably seriously disagree with him in his statement that "not one pain in a thousand in the appendicular region has anything to do with appendicitis."

It seems to be quite impossible for a medical man to write a book for the laity without becoming verbose and extending over many pages that which might be placed upon very few, and this book is an illustration of this fact. Many of the theories which are advanced will probably be criticized by medical men who are inclined to be more conservative than the writer. That the laity need additional information in regard to methods of dress

and feeding is undeniable, but we have yet to see the man who would seem to have made a glittering success of this difficult task. Certainly this author has not.

TABER'S POCKET ENCYCLOPEDIC MEDICAL DICTIONARY. Edited by Clarence W. Taber. Third Edition. Laird & Lee, Chicago, 1905.

We are told in the preface that this little book is intended to supply a demand not met by other pocket dictionaries; that it embraces all the really important medical words in active use; and that its definitions are more complete than in most dictionaries of this size. On looking through its pages we cannot, however, see that it possesses any distinct advantages over a number of other volumes of the same size which are intended to meet the same demand.

SURGERY: ITS PRINCIPLES AND PRACTICE. By Various Authors. Edited by William Williams Keen, M.D., LL.D., and John Chalmers Da Costa, M.D. Volume IV., Illustrated. W. B. Saunders Company, Philadelphia and London, 1908.

In the fourth volume of Keen and Da Costa's Surgery it is a pleasure to see the admirable work of the junior editor recognized on the title-page. This volume is written by Abbe, Bevan, Cabot, Coley, Dench, De Schweinitz, Edsall, Horwitz, Kanavel, Bransford Lewis, McCaw, Murphy, O'Reilly, Ranschoff, Rixey, Rodman, van Hook, and Young.

The subject of hernia very properly has been allotted to Coley, whose enormous experience, particularly in the treatment of hernias in children, gives to his utterances unquestioned authority.

After a discussion of the various methods of operation Coley states that he still believes that the Bassini operation gives the best ultimate result in oblique inguinal hernia. In all cases of direct hernia the transplantation certainly has great advantages. In the treatment of femoral hernia he prefers the purse-string suture. The number of relapses after radical cure based on a large number of cases is placed at less than one per cent. As to umbilical hernia in children, Coley believes that operation should be rarely advised. As to huge umbilical hernia he notes that the mortality is large, reaching at least 10 per cent, and advises against the procedure excepting on the part of those skilled in such surgical work and provided with competent assistants. The Mayo operation he regards as the best.

Abbe gives a brief but admirable description of the surgical anatomy of the rectum. In the cure of hemorrhoids Allingham's method of excision and ligation is commended.

Edsall's contribution is a most valuable chapter upon examination of the urine in relation to surgical measures. As to cryoscopy, he notes that the results of its use have not been satisfactory, except in the hands of enthusiastic advocates. As far as our power to determine functionating capacity of the two kidneys is concerned, Edsall believes that we must still rely upon the older and simpler methods—*i.e.*, examinations for albumin, casts, and other formed elements, total quantity in twenty-four hours, and specific gravity. Even more than this we must rely upon a searching history and examination of the patient in order to discover and eliminate the distant effects of renal disease.

Cabot's chapter, devoted to stone in the bladder, is written with this author's customary clearness and directness and places a needed emphasis upon the value of litholapaxy.

Young in his chapter devoted to the surgery of the prostate admirably covers not only the subject of hypertrophy, but the other recognized surgical affections of this gland. He condenses his now generally accepted views in the space of one hundred pages.

Surgery of the penis and urethra, by Horwitz, including, of course, the subject of gonorrhea, summarizes excellently the accepted teachings of the day.

Bevan's section on the spermatic cord and seminal vesicles includes all that appertains to the work of the general surgeon in so far as diseases of these organs are concerned.

As could be expected, Murphy's chapter upon appendicitis is characteristic of its brilliant author and constitutes a monograph unequaled in value to the operating surgeon.

Dench in the section devoted to the ear has confined himself to malformations and inflammations which lie directly within the surgeon's province, taking up briefly the subject of intracranial complications.

Surgery of the eye, to which somewhat less than a hundred pages are devoted, is traversed by de Schweinitz in a manner which leaves nothing to be desired. Probably the great majority of operations which he describes with the lucidity of one who because of daily practice has long since forgotten their difficulty would never be attempted excepting by the specialist.

O'Reilly's chapter upon military surgery should be read by all medical men as a part of general information. It is probably the best condensation of the general principles to be found anywhere.

The chapter devoted to tropical surgery discusses in general the conditions affecting the surgery of the tropics, and gives the symptomatology and treatment of the principal surgical diseases.

Rodman's chapter closes the book with the interesting subject, "The Influence of Race, Sex, and Age in Surgical Affections."

This being the last volume of the Keen and DaCosta Surgery, a general criticism of the entire work seems timely. Contributed as are the great majority of the papers by men who are recognized authorities in their subjects, the book is invaluable to the active working surgeon. From the standpoint of him who would find in it a reference library it is almost equally serviceable, since there can be found references to at least the most important contributions to the literature of almost any surgical topic.

As is inevitable in all Systems, the quality of the work varies greatly even though the editorial work has been most skilfully done. With few exceptions the articles in the System can be used as sources of reference for what is recognized as standard teaching in the practice of surgery.

GONORRHEA IN WOMEN. By Palmer Findley, M.D., C.V. Moseby Medical Book and Publishing Co., St. Louis, Mo., 1908.

This book is issued for the purpose of presenting gonorrhea in its entirety as it attacks women, and since elsewhere such a study in the English language is not available, it should serve a most useful purpose. In the historical sketch are briefly outlined the accepted teachings on the subject, and the same may be said of the etiology and pathogenesis.

As to the pathology, it is held that the vaginal portion of the cervix is commonly the seat of gonorrheal infection, excepting in infancy and old age, in which periods of life gonorrheal vulvovaginitis is not uncommon.

Baer's statement that invasion of the rectum by gonococci is of frequent occurrence in women apparently receives support. The author holds that the internal os affords a barrier to the upward progress of the disease, which does not incline to go beyond the internal os unless excited by mechanical means, such as the passage of a sound, curettage, excessive venery, and injudicious exercise.

Noeggerath's conclusion to the effect that the gonococcus can exist in the tissues throughout the lifetime of the individual, and that at any time under favorable influences the infection may light up into what appears to be a new and acute infection, or may transmit a virulent infection without itself becoming manifest, is apparently indorsed.

So-called one-child sterility is accounted for in large measure by a preëxisting gonorrheal infection during the puerperium, infection which was confined to the cervix being then prone to extend to the corpus and tubes.

Following Neisser's teaching in making an examination Moseby subjects the cervix and eventually the endometrium itself directly to an examination for gonorrhea, although it is stated that the rectum should

never be overlooked when there are signs of irritation about it.

Noeggerath's statistics are quoted to the effect that 80 per cent of married men have had gonorrhea, and that 90 per cent of these have never been thoroughly healed; and that of five married women three have gonorrhea.

As to the question of sterility Kehrer is quoted to the effect that of ninety-six sterile marriages the fault lay with the husband in at least forty cases, certainly too high a percentage. In discussing the question as to whether a man who has or has had gonorrhea may be safely married, it is held that when by repeated bacteriological examinations the gonococci cannot be found, the mistakes made will be so few that the physician is justified in assuming the risk.

The abortive treatment consists of irrigations with strong protargol solutions. In the treatment of the acute stage rest and absolute cleanliness are advised. After involvement of the cervix and endometrium pure formalin is the application of preference.

Favorable mention is made of the vaccine treatment of vulvovaginitis. The brief section devoted to Systemic Gonorrheal Infections summarizes the accepted teachings on this subject.

CORRESPONDENCE.

LONDON LETTER.

BY J. CHARLTON BRISCOE, M.D.

The discussion on heredity held at the Royal Academy of Medicine during the last month was very well attended, and was voted a complete success. The reason for this is to be found in the fact that the speakers were chosen from scientists who have studied the subject on different lines. Two adjournments were necessary, and on the third day the time of speaking had to be limited to ten minutes. The introductory address, given by Sir William Church, late president of the College of Physicians, dealt with the general aspect of the subject. Sir William Gowers followed and discussed heredity in nervous diseases. He gave the histories of two families drawn from the peerage, in which myopathies frequently occurred, and showed that both lines were descended from a common ancestor, a certain duchess. After giving several other instances, he concluded that the myopathies show a definite hereditary tendency, but that those conditions in which the abnormal development of connective tissue in the central nervous system was the predominant lesion were not dependent on inherited faults. Considerable stress was also laid on the fact that the males had but little chance to transmit their faults, because the disease developed at too tender an age. It was thus unjustifiable to conclude that transmission only took place through the females. Nettleship's genealogical tree of familial night-blindness was held to conform to Mendel's law, a statement which was vigorously opposed by a later speaker.

Professor Bateson, of Cambridge University, next propounded the Mendelian law, and gave examples of the result of crossing different varieties of sweet peas and of the interbreeding of animals which showed some definite characteristics. He considered that the incidence of the varying pigment in the iris and the deeper ocular changes associated with them were instances conforming to the law, as were also certain deformities of the phalanges of the hand. The onset of early baldness was suggested as a subject full of promise. This research would be facilitated by an inspection of the photographs of our ancestors, but photographs are not usually taken in such a manner as would best dis-

play the area of greatest interest, and it is obviously quite impossible to accept as evidence the description of an individual even from his most intimate friend after the lapse of a few years. So that this suggestion, as far as getting past instances goes, does not seem to be very practical.

The gist of Dr. Savage's remarks was that the histories of patients both as regards the present and past generations were quite unreliable, and he did not feel justified in drawing any conclusions as to the influence of heredity in either insanity or epilepsy.

This concluded the first day's proceedings.

At the adjourned meeting Dr. Latham explained that as regards phthisis all the evidence is in favor of local infection, and that there is practically nothing in favor of an active predisposition. It was of course accepted that acquired properties could not be transmitted. Dr. Fullerton followed from the experimental side. He showed that it was not possible to produce an increased susceptibility to mouse tumor by breeding together mice affected with the same, but that the rate of growth of a tumor already implanted could be influenced by the inoculation of different materials—*i.e.*, by producing alterations in the soil. From the examination of a large number of records he was convinced that the death-rate from cancer for the parents of those now affected by that disease corresponded with the average death-rate from cancer at their several ages. This was a very interesting paper, and if his statement is accepted it should bring comfort to many, and may lead to some alterations in the methods of leading lives with a family history of cancer, which are at present adopted by some of the leading assurance companies. The views of the statistician were next voiced by Dr. Karl Pearson. He would have nothing to do with the Mendelian law and did not consider that sufficient proof of the existence of any such law had been adduced, either in plant or animal life, and certainly no satisfactory evidence of its application to man. It was this speaker who denied that the law was applicable to the table of hereditary night-blindness, and asserted that the table itself was very strong evidence against the existence of such a rule of nature. He, however, conceded that a resistance or susceptibility of one particular tissue might be transmitted to another individual.

The last day was not productive of much matter of interest. Dr. Bullock characteristically remarked that only ten or twenty of the genealogical trees which had been published were complete enough to be of any scientific value. Finally Sir William Church summed up the discussion, saying that it had been extremely interesting and somewhat profitable, but the subject seemed to be inexhaustible. Probably this was the general opinion.

It is with much pleasure that we have to record the acceptance of the post of Professor of Pathology to the University of Aberdeen by Dr. George Dean. Professor Dean has been connected with the Lister Institute for many years, both at Sudbury in the actual preparation of sera, and more recently at the Institute in London. He opened the discussion on phagocytosis at the Exeter meeting of the British Medical Association in 1907, and has among other things done very good work on the opsonic theory, in the side of which, however, he is one of the thorns.

Among those who have received honors on the occasion of the King's birthday are several medical men. Sir G. Anderson Critchett, a distinguished ophthalmic surgeon, has been created a baronet. Probably no one has deserved his honor so thoroughly as Sir Jonathan Hutchinson. The lay press, no doubt from modesty, have associated his name with the study of leprosy, but in his earlier years Sir Jonathan was an ardent syphilographer, and first described the teeth of congenital syphilis, with which his name must be known to all medical men. He is by no means a young man, but we trust he may long be spared to enjoy his well-earned reward. Dr. Thomas Oliver and Dr. Stewart Woodhouse have also received the honor of knighthood. The

former has done good work in connection with the medical aspect of the various trades, and the latter as medical representative to the Prison Board in Ireland.

With much regret we record the death of Sir Henry Pitman. Sir Henry was some years ago one of the physicians to St. George's Hospital, and a little later registrar to the Royal College of Physicians, and for many years had been the emeritus registrar to that body. The medical profession are as a rule not a particularly long-lived class of men, but Sir Henry had passed his hundredth birthday. Dr. Charles Beevor died suddenly on the morning of December 5, apparently from angina pectoris, without having had any warning attack. By his early death the National Epileptic Hospital in Queen's Square has lost a keen neurologist. Dr. Beevor was widely known through his book on nervous diseases.

NOTES AND QUERIES.

THE EMMANUEL MOVEMENT OF MENTAL HEALING.

Few irregular movements in medical practice have succeeded in gaining so wide a publicity as the so-called "Emmanuel Movement," inaugurated and developed by Reverend Elwood Worcester, of the Emmanuel Church in Boston. The reasons for this are not far to seek. The methods used are claimed to be novel, inasmuch as "sound religion" is associated with scientific method in the treatment; medical practice is freely acknowledged, but regarded as insufficient in certain cases; a mystical supernatural element is introduced in which prayer plays an important part; Christian science is to be attacked in its own stronghold; and finally, the medical profession is to coöperate in the work. With this general plan the "Emmanuel Clinic" was actively begun about two years ago. It has been widely exploited, skilfully advertised, has gained many followers, and, according to its promulgators, has spread to all quarters of the earth. All this is not surprising, nor in the least disturbing, except in so far as it implicates the medical profession in a movement for which the latter can in no way be held responsible, and which now and always has been absolutely beyond its control.

It is true that at the outset Dr. Worcester gained the tentative approval of certain prominent neurologists; it is also true that others vigorously disapproved of his plan from the first; but to these small attention was paid. Many others in the medical profession with small knowledge of the real questions at issue were indifferent. The corner-stone of the movement, according to the repeated statements of Dr. Worcester, has been the coöperation between the medical profession and the Church. In this matter there has evidently been much misrepresentation. The fact is that the medical profession as a whole in this city, as in others, never has stood behind the movement and is increasingly less inclined to do so. Even its chief medical apologist has on more than one occasion said that social workers and others were more competent to carry on the work than ministers. Certainly the neurologists of this and other communities as a class regard the movement as a mistake and inimical to the best interests of the community at large. In view of his repeated expressions of opinion in this matter, it would seem to be incumbent upon Dr. Worcester to restate his attitude. That he now has no appreciable backing from men particularly concerned with neurological practice and teaching is apparent to those who have followed recent events, nor has he the active sympathy of other informed members of the profession. Under these circumstances we await with interest his further course. The time has certainly

come to correct the wide-spread opinion, which has been so large an asset of the whole movement, that the medical profession approves of this bizarre therapeutic effort. It should be distinctly understood that the public utterances of individuals are not to be taken as expressions of general medical opinion.

Apart from all other considerations, we are also convinced that the kind of co-operation which Dr. Worcester supposes he has is an impossibility as a general principle. It is not for a moment to be conceived that this great field of mental therapeutics is to be turned over to the churches, nor is it conceivable that representative medical men will indefinitely stand between the public and the minister to pass on patients which it is their manifest duty to treat themselves. That the profession at large needs instruction in the practice of psychotherapy we willingly admit; we believe that such instruction should be given at medical schools, to the end that the limitations as well as the possibilities of mental treatment be laid down, so far as our present knowledge permits. We furthermore believe that common loyalty to the profession and its traditions should not permit us to encourage an irregular movement in psychotherapy any more than we would encourage an irregular movement in any other department of medicine. We emphatically deny that Dr. Worcester has anything to offer in the way of psychotherapeutic procedure which is denied the physician, unless it be the emotional element associated with prayer, and this, whatever it may be in last analysis, is insufficient upon which to build a cult of healing. The public appeal and newspaper notoriety are so totally alien to legitimate medical methods that they require no discussion at this time.

The only knowledge which is of value in the field of abnormal psychology and mental therapeutics has been gained from the laborious investigations of psychologists and physicians. This all are free to use, but that its use is best safeguarded and likely to be productive of the best results in the hands of men with general medical training will not generally be denied. The field is foreign to the ordinary clerical mind and is not a matter which in any large way concerns the churches, which very intimately concerns the medical profession, and which the profession is quite capable of handling in the future as it has in the past. If the fate of the churches, as Dr. Worcester implies, depends upon a personal healing ministry in the physical sense, it is surely time that their doors be closed. We are, however, under the impression that the churches have never been so active as now in good works, in the establishment of hospitals and dispensaries, and in legitimate coöperation with medicine. It will be highly unfortunate if this salutary relation, which has existed for centuries, be strained by a confusion in the proper work of the two supplementary professions.

In a broad consideration of the Emmanuel Movement we make no denial whatever that Dr. Worcester and his associates have benefited many individuals; so they did before the movement was started, and so do many others whose names are never heard, both within and without the Church. The good the movement does is apparent and may be accepted for what it is worth. The harm it does is fundamental. It places both the medical and the clerical profession in a false light; it raises false hopes; it interferes with the relations between doctors and their patients; it encourages superficiality in the consideration of a great problem; it misrepresents the significance of the psychotherapeutic movement; it is an abuse of medical charity; it retards progress in the only direction in which normal psychotherapeutics can grow—through the medium of the medical profession.

It is perhaps idle to speculate regarding the future of the movement. This much seems certain—that it has wholly alienated the best minds in the medical profession, and that the Church is skeptical, and in some instances openly antagonistic. Under these conditions we can see in it few elements of permanence.—*Boston Medical and Surgical Journal,* Nov. 26, 1908.